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Review
FIRST QUARTER 2002
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Big Bucks in Endangered Species

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The United States has been a remarkable job-creation machine over the past three decades. Even as layoffs at Fortune 500 companies got the headlines – four million jobs eliminated in 30 years – small- and medium-size businesses were quietly growing to the tune of 62 million new jobs. That fact is important context for reading the article on page 24 by the Milken Institute's Ross DeVol about the labor-market effects of September 11. Obviously, the terrorist attacks were a shock to our nation on every level, including the economy. But I believe the long-term job-creation trend is intact.

Over the years, we've suffered other shocks that affected confidence, spending and the financial markets. The 1973 oil embargo, for example, was followed by credit controls and cutbacks in lending that denied capital to the small- and medium-size businesses that employ most of our workers. In the following year, interest rates rose sharply, the economy contracted and equity prices fell by almost half. Fortunately, the response to the terrorist shock has been more enlightened: increased liquidity and lower short-term interest rates. These stimuli, combined with previously enacted tax cuts and relatively stable energy prices, can help cushion the impact on jobs.

As confidence continues to grow, tourism and business travel will eventually return to normal. I believe that economic historians will see the response to the shocks we've suffered as an affirmation of the American economy's durability and dynamism. It's an economy that increasingly draws strength from human capital. As noted in the article about "The New Economics of Place" (page 88), the knowledge, skills and experience of talented individuals have far greater value than mere financial assets.

But if skilled workers were all it took to create a dynamic economy, then Japan would not have stagnated for the past decade and Europe would have mirrored the U.S. job-creation miracle. What has set America apart is the way it has democratized capital. Faced with a major credit crunch in the 1970s, large financial institutions focused on their own survival, turning their backs on small growing businesses that needed capital to create jobs. In response, the markets created innovative new financial technologies – securitized debt, mortgage and credit-card obligations, and a variety of equity-based derivatives – that provided growth capital and launched a tsunami of job creation. This access to capital is a key reason the U.S. has outpaced Europe five to one in net new jobs over the past generation.

Mourn as we do for the human toll of September 11, we need not mourn for the U.S. economy or its ability to create jobs. Entrepreneurs who needed capital used to face the question, "Whom do you know?" Today's markets ask, "What can you do?" That fundamental change provides a strong basis for optimism about the economy and job growth.

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I'm proud the *Milken Institute Review* offers original, insightful – even accessible – articles on economic and demographic policy. But I'm equally proud that the *Review* is part of the Milken Institute, providing a forum for home-grown research, and supplementing the dialog in subjects nearest and dearest to the Institute.

Which brings us to the cover article by **Ricardo Bayon**, a fellow at the New America Foundation in Washington and a specialist in environmental finance. Trading in rights to emit pollutants (like the sulfur that causes acid rain) is now widely accepted as a means of getting the most bang from an anti-pollution buck. Here, Bayon describes the latest in environmental market-making – tradable mitigation credits in wildlife habitat.

"By setting a price on the destruction of wetlands, mitigation banking is helping to incorporate these ecosystems into the tangible economic system," he says. "When wetlands destruction costs in the ballpark of $44,000 an acre, developers are likely to think twice before causing the damage."

To read about the Institute's own work in environmental finance – notably, research related to a day-long conference at the Institute last year, check our website at http://www.milkeninstitute.org/finance/index.html.

Alice Amsden, a development economist at MIT, is probably best known for her iconoclasm. And in this piece on North-South relations, she doesn't disappoint. "If enthusiasm for globalism nose dived immediately after September 11, the bargaining power of developing countries rose in ways that are just beginning to be understood," she writes. And for Amsden, that's just as well: "From the anti-sweatshop movement to the World Bank, a cult of poverty colors advanced-country thinking," one that undermines out-of-the-box development initiatives.

In the last issue of MIR, Peter Navarro and Aron Spencer offered a first cut at estimating the economic impact of September 11 on the economy as a whole. In this issue, **Ross DeVol** and **Perry Wong** of the Milken Institute use a regional economic model to estimate the consequences of Sept. 11 for America's cities. "The impact of the attacks on the World Trade Center and the Pentagon are still pulsing through the American economy," they write. "And because these effects are concentrated in a handful of sectors, the consequences for individuals and localities can be quite dramatic – think of restaurant workers in Honolulu and Miami, or baggage handlers at O'Hare and LAX."

Their model, incidentally, is derived from a detailed study of Sept. 11's impact on Los Angeles, commissioned by the mayor's Economic Impact Task Force. Check out http://www.milkeninstitute.org/lamayor/taskrpt.pdf.

Not so long ago, economists obsessed about inflation. Now, attention has shifted to

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a phenomenon last seen during the Great Depression: deflation. **Barry Bosworth** of The Brookings Institution offers some perspective. "The concern ought to be with recession, not with deflation, per se," he explains. "If people really want to fret about deflation, they should focus on falling asset prices – real

estate, stocks and the like – not falling prices for goods and services."

Who could offer a better defense of big government than **Charles Zwick**, Lyndon Johnson's budget director? Try Zwick, writing with **Peter Lewis**, his assistant director, and **Robert Levine**, the deputy director of the Congressional Budget Office in the late 1970s.

The trio are upset by the demonization of activist government in general and, in particular, with Bill Clinton's efforts to make the Democratic Party indistinguishable from the Republicans on many economic issues. "'Government should not' is traditional Republican ideology," they write. "But with help from Bill Clinton and the New Democrats, the Republicans have managed to morph 'should not' into 'cannot.'"

The bust in the telecommunications industry has stalled the broadband revolution – that just-around-the-corner era when Americans will gain routine access to enhanced services ranging from videophones to movies-on-demand. But **Daniel Gross**, (yet another) fellow at the New America Foundation, suggests that such infrastructure cycles are more common – and probably not as damaging – as is generally understood.

"The cycle we have just seen in fiber optics – overbuilding, excess capacity, ruinous competition, falling prices, bankruptcy and consolidation – is nothing new," he reminds. "For nearly two centuries, entrepreneurs and established players have set out to build networks that link portions of the country. And while the networks have survived and prospered, their creators have rarely fared well."

Are you happy to pay that extra buck your friendly neighborhood coffeehouse charges for a beverage made by well-compensated yeoman farmers rather downtrodden peasants? You may not be getting your money's worth – or so says **Greg Rushford**, publisher of a newsletter for trade and development professionals. "When you buy 'fair-trade' coffee, there is slim reason to believe that you are empowering exploited farmers," he writes. "Fair-trade coffee, in short, is a far darker blend than advertised."

And, as usual, there is much much more. **Ross DeVol** unveils the Milken Institute's New Economy index, showing which states are primed for development and which aren't. **Hernando de Soto**, the great development economist from Peru, lays out his singular vision of why it is so difficult to mobilize capital and entrepreneurship in the Third World. The Institute's **Bill Frey** explores the growth of Spanish-only households in the United States. **Steve Postrel** is back to stump you with a puzzle. And, of course, cartoonist **Mark Alan Stamaty** is readier than ever to deflate Washington's gasbags.

— *Peter Passell*

JORGE SILVA/REUTERS/TIMEPIX

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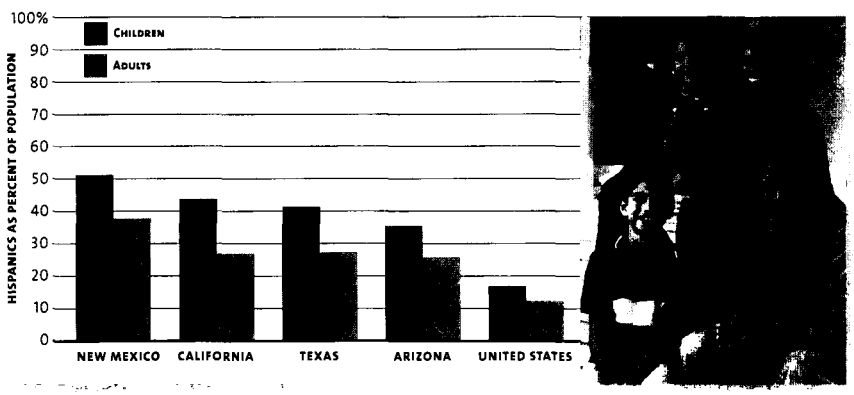
BY WILLIAM H. FREY

While hardly anyone is surprised these days by reports that America is becoming more diverse in terms of race and ethnicity, statistics still have the power to startle. Take the growth of Spanish-speaking residents. This growth is so dramatic in some parts of the country that it has become a major variable driving economic and social change. Among other things, it is creating opportunities for business – though exploiting them may also require previously monolingual Americans to become at least modestly conversant in Español.



SOURCE (ALL): William H. Frey, Analysis of Census 2000 Supplementary Survey.

Toy manufacturers, for example, upped their production of bilingual talking dolls (a switch converts them from English to Spanish). Univision is now available on local cable systems in small Old South communities, which long managed nicely on the usual mix of neutral American newscaster-speak and the local drawl. Disneyland now has a regular "Mickey Mambo Night," replete with bilingual staff, to appeal to the Latino population surge in the once very white, very conservative Orange County, California.

GEOGRAPHIC SPLITS

Some 10.5 percent of American residents now speak only Spanish at home, up from 7.5 percent in 1990. They tend to concentrate in regions that have sustained significant past and recent immigration from Latin America or the Caribbean. So it should be no shock to learn that California, Texas, Florida and New York are home to two-thirds of the country's Spanish-only speakers. Throw in Illinois and New Jersey, and you've got three-quarters of them housed. By contrast, just one in 5,000 Spanish speakers lives in Vermont.

BRUCE SANDERS (ALL)

BILL FREY is a senior fellow in demography at the Milken Institute.

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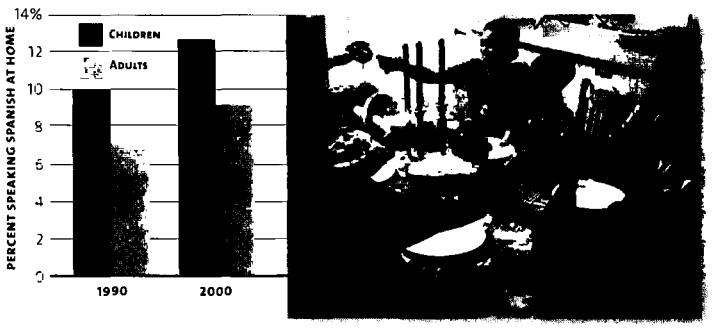
CHARTICLE



This skewed distribution is equally evident in some cities. The new Census 2000 Supplementary Survey suggests that you can probably get along better in Spanish than English in Santa Ana (California), El Paso and Miami, where more than six of every 10 residents speak Spanish at home. And only-Spanish-at-home speakers make up at least a quarter of the population of 13 other large cities. Compare that to cities where Spanish has hardly made a dent – among them Cincinnati and Pittsburgh, where only-Spanish-at-home constitutes 0.7 percent and 1.4 percent of their respective populations.

GENERATIONAL SPLITS

The concentration of Spanish speakers follows a generational divide as well as a geographic one. More children (12.5 percent) than adults (10.0 percent) speak only Spanish at home, though both figures have risen substantially since 1990. This difference is especially large in California, where a third of children fit this description, compared with less than a quarter for adults.

That's because Latin American immigrants are generally young and are inclined to have large families. It's common for children, even in the second and third generation, to speak Spanish at home with their parents while learning English in school. The new statistics bear this out; a higher proportion of school-age children than adults are bilingual.

MAPPING THE FUTURE

In California, Texas, New Mexico and Arizona a quarter or more of all school-age children speak Spanish at home. In eight other states, including Nevada, Florida, Illinois and the District of Columbia, more than one in 10 school-age children are in the category. The Census 2000 Supplementary Survey also documents the gradual spread of Spanish lan-

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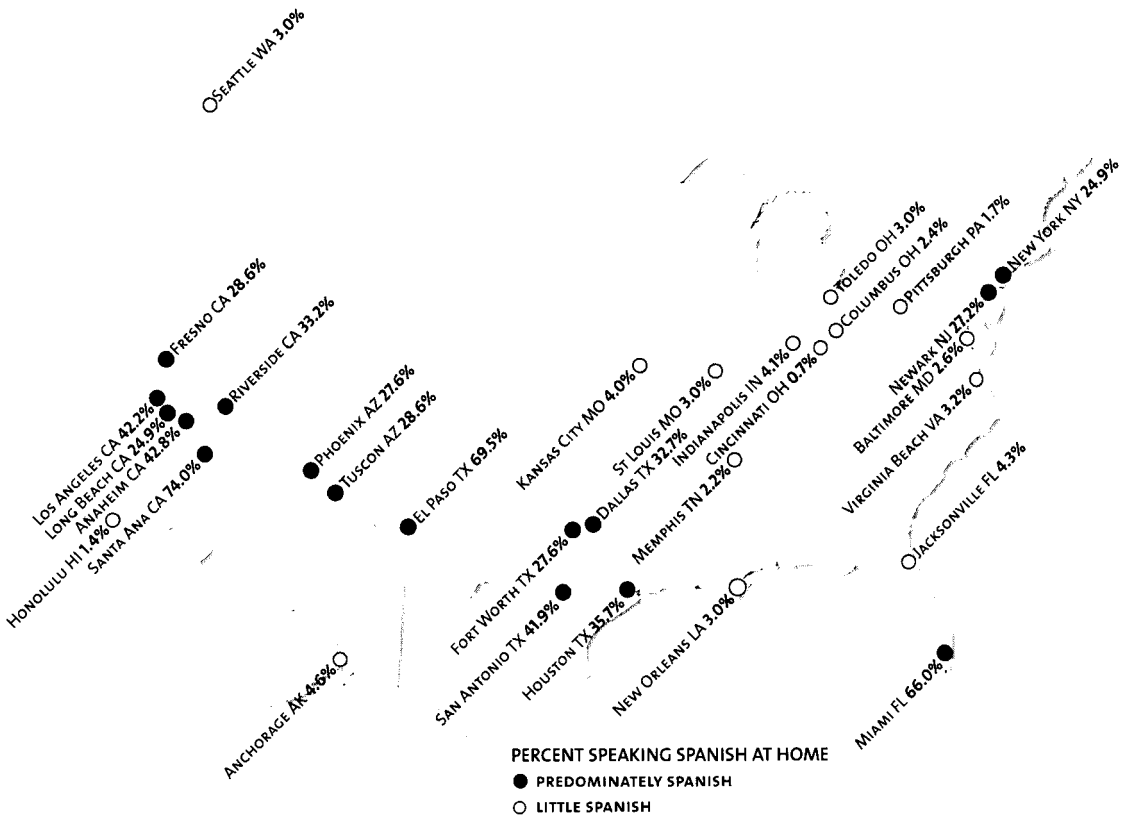
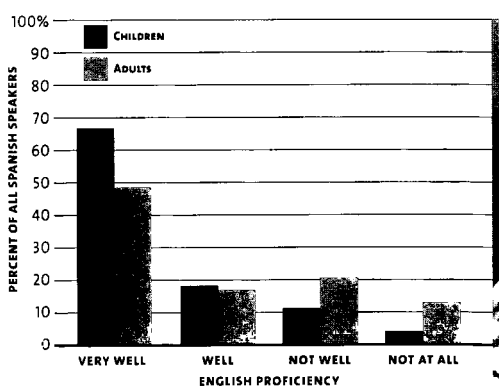


guage use to 11 additional states, including several in the Southeast, the Pacific and the Rocky Mountain West. While small in numbers, these children and their families will lead the demand for new consumer products and public services (notably schools) in communities that have little experience with Spanish language populations.

This wide diffusion of Spanish speakers will undoubtedly lead to changes in cultural amenities, as well as food and music in their communities. Yet, driven by sheer numbers, the major impact of Spanish will mostly be felt in the high concentration states over the next two decades. Prime among these are New Mexico, California, Texas and Arizona. When young Spanish speakers reach maturity, their cultural and linguistic presence will loom even larger than its does today. Hence any business, community organization or politician striving to succeed will need to cope with the reality of bilingualism. M



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BY ALICE H. AMSDEN

If enthusiasm for globalism nose-dived immediately after Sept. 11, the bargaining power of developing countries rose in ways that are just beginning to be understood. Their new strength derives from the realization that globalism requires international political stability, while poverty breeds unrest. And now that the message is out, poor countries with greater leverage haven't been shy about making their wishes known. Exhibit A: One of Pakistan's demands for cooperating in Afghanistan was a higher quota for its textile exports.

The enlightened self-interest driving America's new enthusiasm for aiding Pakistan seems to have spilled over elsewhere, too. At the World Trade Organization's meeting in Doha, Qatar in November, members agreed to make drugs for epidemics available to poor countries at below-average-cost prices. But this may have been the high-water mark in the altruism department; the big pharmaceutical companies are already balking at the concession. And since nothing much else happened at Doha, no change is likely in the developing world's hostility toward yet another round of trade liberalization.

That puts the spotlight on the WTO's core problem. The agenda is supposed to move beyond trade to the broader issues of managing global markets – in particular, protecting intellectual property rights and freeing multinationals from parochial regulation. Yet with China now at the table to buttress the *dirigiste* views of Brazil and India, the developing countries' demands are likely to gain clout.

What, precisely, are their demands? And if their wishes were granted by the advanced economies, would the world economy be better or worse off? Read on.

ALICE AMSDEN teaches political economy at MIT and is the author of ***The Rise of "The Rest": Challenges to the West from Late-Industrializing Economies*** (Oxford University Press, 2001).

THE CULT OF POVERTY

A big blue sky separates what Southern countries have long demanded and what Northern anti-globalists and pro-globalists alike have seen as their just deserts. From the anti-sweatshop movement to the World Bank, a cult of poverty colors advanced-country thinking. Allegedly, the South is hopelessly destitute and corrupt. Whatever economic gains it makes, debt crises are bound to erode. Poverty is thus recurrent, and the appropriate policy thrust is poverty alleviation. Anti-poverty measures have thus tended to crowd out policies aimed at development.

The gist of the anti-sweatshop movement's approach is to alleviate poverty by raising minimum labor standards. The resulting

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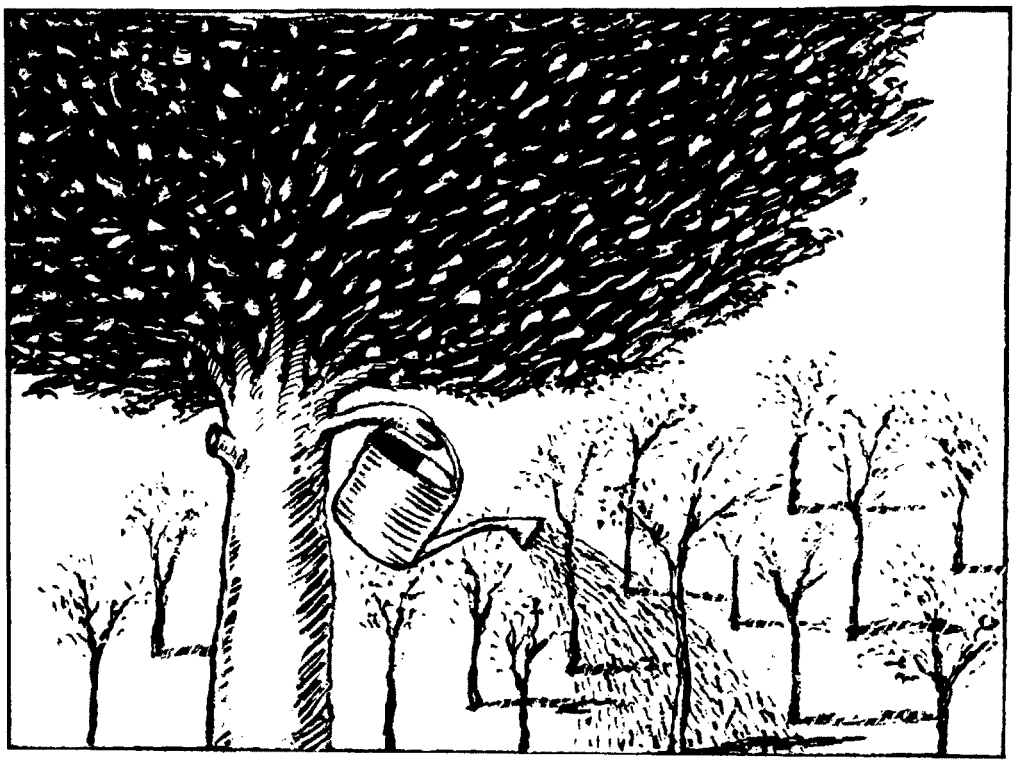

JERZY KOLACZ

increase in wages is supposed to bolster domestic demand. With demand rising at home, the pressure to export will taper off, thereby sparing workers in advanced economies a "race to the bottom" in the production of labor-intensive goods.

Alas, the movement's argument doesn't stand up to analysis on its own terms. For one thing, rising wages in developing countries can't create markets comparable in purchasing power to those of advanced economies. Consider an old colonial couple, the Netherlands and Indonesia. The population of Indonesia is about 13 times greater than that of the Netherlands, but the market in the Netherlands, measured by its GNP at current exchange rates, is almost three times greater than Indonesia's.

Instead of labor and environmental standards, which many disparage as protectionism in disguise, the developing countries want room to grow through exports of agricultural products, textiles and steel. If the South can export more, this is bound to trigger capital formation, especially in the poorest countries – developmentalism par excellence. Yet anti-globalists in rich countries, keen on holding together political coalitions that include import-vulnerable labor unions, are silent when it comes to opening their markets.

For the World Bank, by contrast, poverty alleviation means aiming loans for health, education, nutrition and infrastructure at poor countries, as well as prying open these countries' markets to give the little guy a fair shake and the multinational an incentive to invest. The Bank's commitment to poverty alleviation started after the Vietnam War under the presidency of Robert McNamara, who made it a top priority.

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But the McNamara approach works better on paper than on the ground. Most developing countries can't attract enough foreign direct investment to make a big difference, even if their markets are wide open. Those that can want to regulate markets in order to ensure that multinationals act responsibly and that space is freed for nationally owned companies – many of which have demonstrated more entrepreneurship than the foreign fogies. Small-scale enterprises, for their part, seem to be forever marginalized unless they can cluster around growth poles created by large companies, as shown in Taiwan.

Experience suggests that most developing countries can't attract enough foreign direct investment to make a big difference, even if their markets are wide open.

The current vogue in development research is to tease out cause and effect between growth and a variety of factors by looking at data from a wildly diverse group of economies. Not surprisingly, growth is found to be faster the greater a country's investment, ethnic homogeneity, political stability, expenditures on education and proximity to the sea. Absent altogether from the equations are policy-sensitive developmental variables such as the degree of local ownership of enterprises, technological skills or industrial transformation. Presumably these factors are ignored because manufacturing is assumed to be beyond the pale of the South.

In fact, this view ignores the wide variability in economic cultures in what is casually labeled the developing world. The United Nations' 2001 Human Development Report estimates that the 40 least-developed countries account for only 13 percent of the population of the developing world (consisting of 152 countries). The lowest level of development is suffered by 36 economies, many with exceptionally small populations and domestic markets. Seventy-eight poor countries have graduated to what is considered by the UN to be a medium level of human development. Poor people abound in these countries, but generally only around 20 percent to 40 percent of the population falls below the poverty line. Most are ready to supplement policies that fight poverty with policies that build globally competitive industries – the heart of modern economic growth.

The cult of poverty not only over-generalizes from the poorest countries, but also ignores the lessons from numerous success stories of the past three decades. Countries including China, Korea, Taiwan, Brazil, Chile, Mexico, Malaysia, Thailand and Turkey began catching up without the benefit of cutting-edge technologies or wide-open trade and investment policies. Indeed, the rise of these late-developing economies involved a mixture of foreign and indigenous enterprises, along with the acquisition of technological capabilities by nationally owned companies like Hyundai Motors (Korea), Usiminas Steel (Brazil), Giant Bicycle (Taiwan), Legend Computer (China), Vitro Glass (Mexico), Siam Cement (Thailand) and Dr. Reddy's Labs (India).

Under the more tolerant General Agree-

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ment on Tariffs and Trade (GATT), established 50 years before the WTO, investment in these countries boomed and per capita incomes sometimes doubled within a decade. Although most latecomers paid a price in periodic financial crises, debt debacles did not come close to erasing the gains.

Thus, three sets of developing countries now exist: what I call "the rest" (the successful latecomers), "the residual" (the poorest) and a large number of middle-income countries in between – "the remainder." "The rest" all had experience in manufacturing before World War II, which seems to have been critical in curbing corruption and enabling developmental policies to work. Experience in the textile and machinery industries, for example, created a supply of local entrepreneurs and managers to run modern companies and state bureaucracies. Experience also led to expectations that new industries would become profitable, which lured capital from proverbial mattresses. With high expectations of profits, it became rational for entrepreneurs to use subsidies from the government to create productive capacity rather than to increase personal consumption.

Since the 1960s, comparable manufacturing experience has been accumulated in UN-defined middle-income countries, including Vietnam, the Philippines, South Africa, Nigeria, Mauritius, Egypt, Morocco, Tunisia, Puerto Rico and Peru. These economies, I would argue, are ready for a big push to modernize selective industries and services. And they are likely to use their newfound bargaining power on the global stage to make the case for industrialization measures along the lines of those used by "the rest."

DEVELOPMENTALISM

The poverty alleviation approach would give poor countries drugs at below-patent prices. The developmental approach is to give them cheap drugs that are produced locally by indigenous companies. India built its drug industry with policies typical of those used to industrialize by "the rest." First, the Indian government recognized only process patents so that national companies could legally copy the product innovations of foreign companies. Second, public sector organizations jump-started local manufacturing by training a cadre of employees who later played a prominent role in private-sector companies. Third, the structure of tariffs promoted learning and movement up the ladder of technological complexity.

By contrast, the Indian software industry strictly upholds international patents in order to attract outsourcing from foreign clients. Software pirates operate openly only in the "informal" sector. Like the pharmaceutical industry, software innovation was jump-started by government organizations (one, for example, trained hundreds of engineers to computerize India's railway reservation system). Nevertheless, by Indian standards, government support for software has been minimal because local companies have been able to compete at world prices.

"The rest," it is important to note, succeeded by tying subsidies to performance standards. The Indian government's price controls on drugs, for example, provided makers with incentive to cut costs and to export. The protection of foreign process patents pressured manufacturers to maximize the efficiency of their own production.

In the Brazilian automobile industry, domestic content rules required foreign assemblers to buy parts and components locally, which gave them an incentive to raise the productivity and quality of local suppliers, typically small- and medium-size companies. Import protection in Korea and Taiwan

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carried with it the obligation to meet export targets. Development banks lent at below-market interest rates to a wide array of industries, in exchange for which clients had to meet standards pertaining to professional management – for example, hiring a non-familial chief financial officer, not exceeding a specified debt-equity ceiling and introducing modern cost-accounting techniques.

Free market ideologues feast on stories of "the rest's" failed experiments. Price controls succeeded in India's pharmaceutical industry but doomed its steel industry to obsolescence. One Brazilian steel mill was first-rate, but another was highly politicized. Certainly, "efficiency" is unlikely to have been maximized to the extent that it would have been had free markets been allowed to work. But then again, free markets might well have been slower to generate the conditions for local enterprise and industrialization.

THE PROGRESS OF NO PROGRESS

The South should be allowed to use some of the same developmental policies that were once tolerated by the GATT on the condition that they do not undermine global prospects for raising economic welfare. This condition would almost certainly not be met if the economic integration agreements already fully implemented by the GATT and WTO were abrogated. A rollback would create a nightmare of uncertainty and declining trade. A further reduction in Southern countries' tariffs could be pegged to a rise in their per capita incomes. The North should increase its quotas for Southern exports of agricultural and labor-intensive products.

Trade barriers aside, the WTO would be wise to see the pragmatic potential in moving neither backward nor forward for a while. It would not be a sin, for example, to give developing countries a breather on issues linked to intellectual property rights and to foreign investors' rights. By the same token, it would probably make sense to give the developing world a de facto veto on other major globalization initiatives as long as they are making good-faith efforts to jump-start their economies. Standing still is difficult in cultures that associate change with progress, but arguably a stationary state would raise welfare in the post-September 11 world.

In the case of trade-related investment property rights (TRIPs) for pharmaceuticals, the world's leading multinational companies argue vociferously that patent piracy in India, China and Brazil reduces their revenues, expenditures for research and development and, hence, the production of new life-saving drugs. For their part, Southern drug makers argue that patent piracy increases international competition and, hence, world welfare.

According to this argument, mergers and acquisitions have raised the market power of the big drug companies, which were losing market share in the South because they are inefficient. In India, imports and locally produced drugs by multinationals' affiliates or subsidiaries accounted for 75 percent of India's market in 1975. Two decades later, they accounted for only 32 percent. The decline in the multinationals' market share was due to both their slowness to market and high prices. A top drug like Ciprofloxacin was priced by a multinational corporation in India at $40, compared with $2.42 by a locally owned company.

In the case of trade-related investment measures (TRIMs), bitter opposition from the South led the Paris-based Organization for Economic Cooperation and Development to abandon its controversial Multilateral Agreement on Investment, which would have given MNCs a free hand to buy into whatever coun-

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try or whichever industry they liked (excluding defense and culture). The European Union and Japan are now promoting a similar measure under the WTO. If it is tabled in response to the South's newfound bargaining power and volubility, multinationals operating in their midst will continue to face performance standards pertaining to technology transfer, local content and trade balancing (whereby they must export an amount equivalent to what they import to conserve foreign exchange). MNCs will also continue to be restrained from engineering hostile takeovers of national companies and from crowding out national competitors before they learn the ropes. (Taiwan gave national companies a five-year head start in telecommunications.)

It's not as though advanced economies are being asked to do more for the poor countries than they do for their own. Liberal rhetoric notwithstanding, loopholes have enabled the WTO to keep its rich constituents happy without breaking treaty obligations. If an industry is threatened by foreign competition, a WTO member can protect it for eight years or invoke antidumping measures. Subsidies are strictly verboten when it comes to exports by the South. But they are strictly kosher when it comes to science and technology, and regional development – otherwise the United States, European Union and Japan might abandon the WTO. American pharmaceutical companies enjoy large indirect subsidies from the National Institute of Health, and American manufacturers of aircraft get large indirect subsidies from the Department of Defense. Analogous support is available from the European Union and Japan.

With ingenuity, "the remainder" can use such measures to strengthen their own industries and companies, just as "the rest" is now doing. The South's demands for heterogeneous developmental policies could be met by freezing TRIPs and TRIMs and by exploiting existing WTO loopholes. It is still unclear, though, how well its economies would fare under so tolerant a global regime.

Much depends on whether "the remainder" can create control mechanisms that carve out a corruption-free development zone in which subsidies are tied to concrete, monitored performance standards. Much also depends on growth in the international economy. When "the rest" rose, they did so during a golden age of capitalism, with growth rates still unmatched. Tariffs started from a high base and reductions made a big impact. The attention of the United States and Europe was riveted on each other's trade barriers, and the developing world was benignly neglected – or given a break to keep its sympathies with the anticommunist West.

Now the developing world is regarded as an "emerging market," and competition among countries within this world is fierce.

The major agent of globalization has been the multinational company. Multinationals account for most foreign direct investment and a rising share of foreign trade – maybe as much as two-thirds in the case of manufacturing. Virtually all the world's leading multinational companies are from a dozen or so Northern countries; in part, this explains the North-South divide. If Northern negotiators to the WTO can finesse the sectoral demands of their own multinationals, big drug companies, farmers, steel workers and textile mills, and if the South's demands for developmental policies succeed in creating world-class locally owned companies, the upshot will be globalism with a kinder, gentler face. If they can't, existing multinationals will remake the whole world in their own image, with inflammatory effects. It is in the interests of peace and prosperity to give the entrepreneurial upstarts a fighting chance. M

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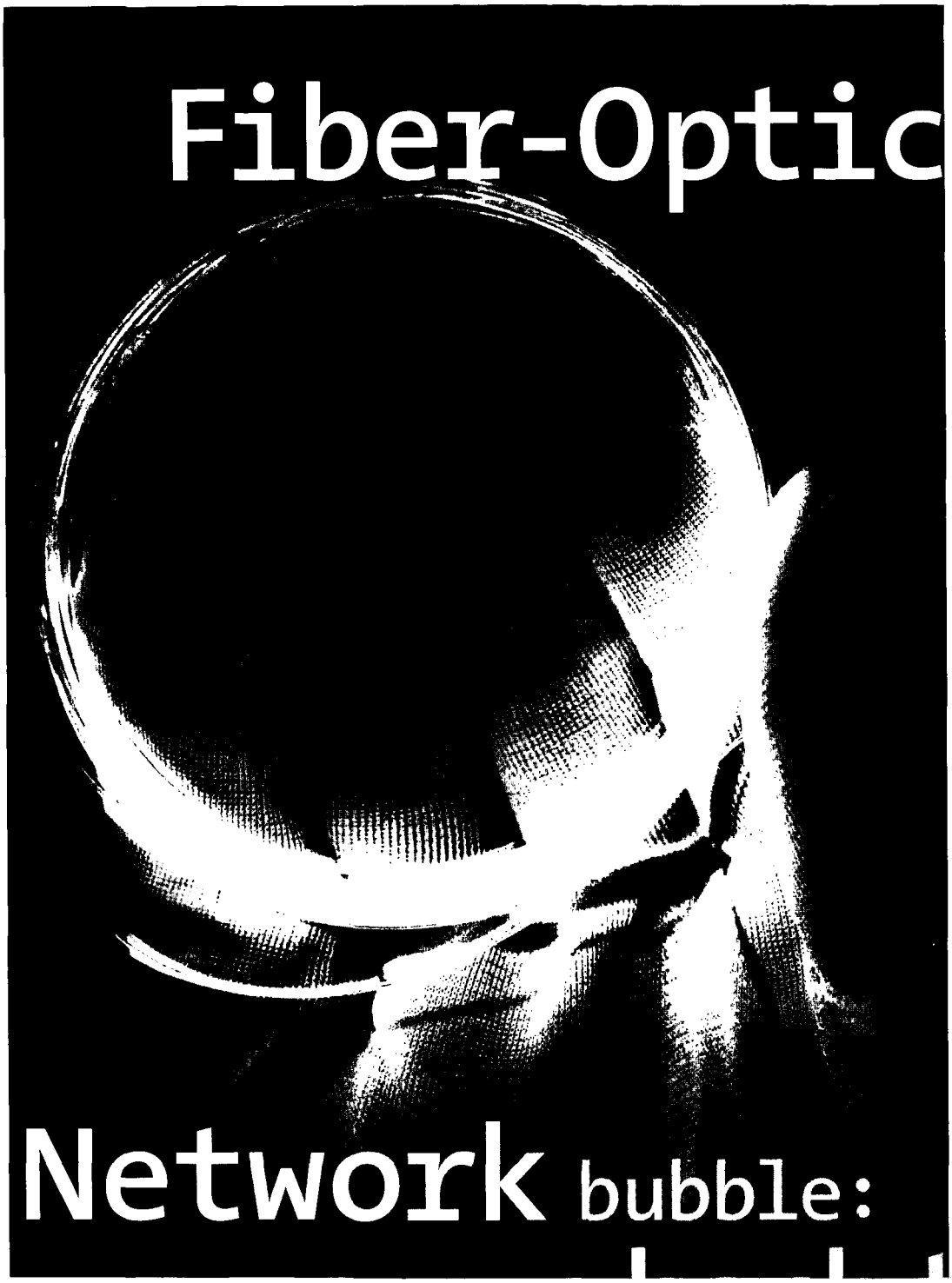

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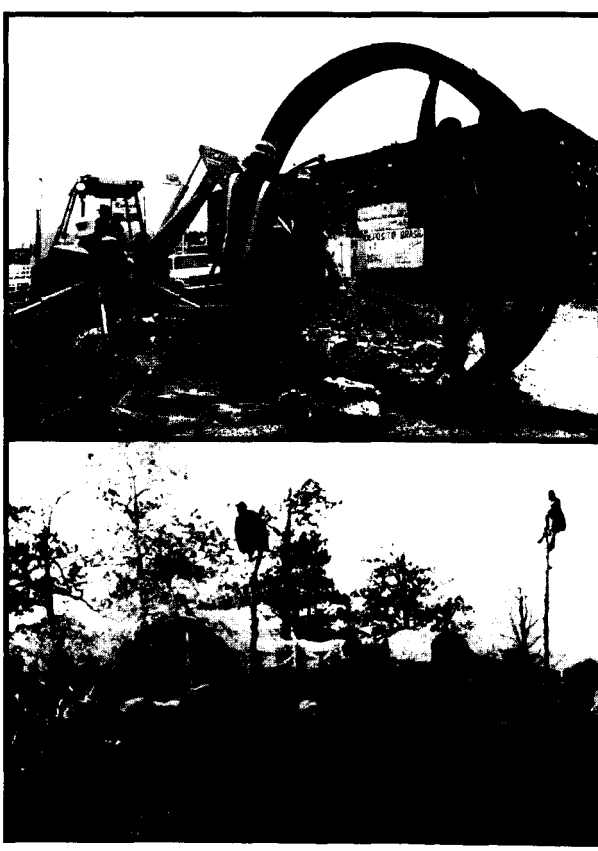
By Daniel Gross

Nearly two years after the great bull market of the 1990s sank, the debris continues to wash ashore in the form of layoffs, bankruptcies and shuttered Web sites. Among the largest casualties were once-high-flying companies that aimed to construct and manage the information superhighway. The Web-hosting giant Exodus Communications, the DSL-service provider NorthPoint Communications and the ambitious Internet network company PSINet, whose sponsorship of Baltimore's gleaming football stadium has lasted far longer than the company itself, have all sought shelter in Chapter 11.

Companies that built and assembled global networks of fiber-optic cables have been hit particularly hard. Global Crossing, 360Networks and Level 3 Communications had business plans that were as ambitious as their names – and loaded on the debt to match. They aimed at nothing less than girdling the globe with ultrathin fiber-optic cable, which possesses thousands of times the transmission capacity of copper wire.

The fiber-optic cable market, which was jolted to life in 1982 when MCI placed an order for 100,000 kilometers of Corning's "waveguides," achieved liftoff in the late 1990s. Spurred by the putative need for infinite bandwidth, the promise of interactive television and computing, and the exponential growth of the Internet, companies rushed to finance and build. With few limits set by regulators, American companies were free to expand as rapidly as they wished. In all, network builders in the United States plowed some $30 billion into 90 million miles of fiber-optic cable. The spending spree, in turn, lit a fire under the stocks of suppliers, including JDS Uniphase, Corning, Lucent and Nortel.

These companies succeeded in creating a national broadband infrastructure almost overnight – one that is now used by nearly all public schools, universities and institutions, as well as millions of homes and businesses. But despite



the future

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the enormous growth in Internet and data traffic, there simply weren't enough bits and bytes moving to keep all that newly laid fiber lit. In fact, on most days, just 5 percent of the nation's fiber-optic capacity is being used. Accordingly, wholesale prices for fiber-optic capacity have fallen at an annual rate of 60 percent – far, far beyond the price cuts one would have expected to be driven by technological change and economies of scale. Not surprisingly, the stocks of Internet infrastructure companies that were largely financed with debt have been massacred.

This high-tech glass meltdown has inspired a great deal of finger pointing. And there's obviously plenty of blame to go around: credulous Wall Street analysts and bankers touted the securities; incompetent and/or arrogant entrepreneurs cast caution to the wind; optimistic technology gurus came to believe their own sound bites. Meanwhile, cable and telephone companies turned the process of linking residences and small businesses to the broadband networks – what has come to be known as "the last mile" – into a logistic nightmare. And federal regulators either intervened too much or too little – depending on whom you ask.

For years now, the denizens of Silicon Valley's office parks, Wall Street's towers and the Federal Reserve's marble halls have been declaiming loudly about the way in which information technology, including these humongous fiber-optic networks, was forging a New Economy – an economic nirvana that constituted a clean break from history. But when it comes to the construction of nationwide networks for commerce and information, the cycle we have just seen in fiber optics – overbuilding, excess capacity, ruinous competition, falling prices, bankruptcy and consolidation – is nothing new. For nearly two centuries, entrepreneurs and established players have set out to build networks that link portions of the country. And while the networks have survived and prospered, their creators have rarely fared well.

The cycle we have just seen in fiber optics – overbuilding, excess capacity, ruinous competition, falling prices, bankruptcy and consolidation – is nothing new.

Indeed, similar infrastructure manias surrounded the telegraph in the 1850s, the railroads in the 1880s and 1890s, and telephony in the 1890s and 1900s. To be sure, the circumstances surrounding these bubbles differed. But their stories bear striking similarities.

- In each, entrepreneurs aimed first to link the business centers of the Northeast and then to stretch long lines across sparsely populated portions of the country.
- Each took place in a climate in which it was possible to raise large sums at low cost.
- Each benefited from the uniquely American approach of relying on private enterprise to manage infrastructure build-outs.
- In each, network builders were hampered

DANIEL GROSS, a fellow at the New America Foundation, is a co-author of *Generations of Corning: The Life and Times of a Global Corporation* (Oxford University Press).

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by the lack of a common standard that would facilitate seamless connections among rival networks.

- Each created platforms for American businesses to grow in size and scope and was an important midwife to globalization.
- Finally, at the end of each cycle, a few well-endowed players reaped immense profits.

THE TELEGRAPH BOOM AND BUST, 1847-1865

In 1842 Samuel Morse, a 51-year-old professor at New York University, strung wires between two Congressional committee rooms and sent messages back and forth. Impressed, the lawmakers granted him $30,000 to construct a telegraph line from Washington to Baltimore. Supplementing the appropriation with private funds, he completed the line. On May 24, 1844, the first telegraph message was sent from the Supreme Court chamber to Baltimore: "What hath God wrought."

Morse helped to form the Magnetic Telegraph Company in 1845, which intended to wire the New York-Washington corridor. But returns were slow in coming; in its first six months of operation, the company notched revenues of $413 and expenses of $3,284. Nor did Morse have the field to himself. Other inventors and entrepreneurs, using rival patents (or appropriating those belonging to Morse), began to build small networks to deliver "lightning," as the telegraph was dubbed.

The number of telegraph wire miles rose from 40 in 1846 to 2,000 in 1848 to 12,000 in 1850. But the early efforts to lash together Northeast business centers foundered on technological and commercial obstacles. Frequently, the "lightning" was reduced to the pace of snail mail, since many incipient networks refused to carry or transmit messages that originated on other lines. By mid-1846, one could send a message on Magnetic Telegraph's line from Washington to Jersey City. But then, as now, the last mile proved problematic. Telegraph messages transmitted to northern New Jersey were ferried by boat across the Hudson.

Despite such problems, hundreds of would-be communications titans invested in

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start-ups. Barriers to entry were comparatively low; stringing a mile of wire cost just $150. And by 1852, 23,000 miles of line were in use, with another 10,000 another under construction. But much of the capacity was duplicative or built far ahead of demand.

In this era of what the historian Robert Luther Thompson called "methodless enthusiasm," few proved more methodless or enthusiastic than the Irish immigrant Henry O'Rielly. In 1845 O'Rielly, who used technology developed by the Scottish inventor Alexander Bain, strung a line from Lancaster to Harrisburg – the start of the grandly named

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Atlantic & Ohio Telegraph Company. But revenues were appallingly low; in the week of Feb. 6, 1846, the line reaped $4.50. After three months, the copper wire was taken down and sold to pay some of O'Rielly's debts.

Undeterred, O'Rielly next set out to wire the sparsely populated territory along Lake Erie, a 400-mile stretch running from Buffalo to Detroit. O'Rielly's Lake Erie Telegraph Company immediately found itself in competition with the Erie & Michigan Telegraph Company, a concern aligned with the Morse interests. There was insufficient business to support the debt service of one such line, let alone two, and by 1854 both had failed.

Despite such stumbles, the telegraph soon came to be recognized as a crucial tool for American businesses. Newspapers, bankers, brokers, wholesalers and retailers became heavy users. And, to their delight, prices fell sharply on routes where there was more than one service provider. Before 1849, the pioneering New York & Boston line charged 50 cents to transmit messages of 10 words or less, and 3 cents for each additional word. But that year, two other lines were completed: the Boston & New York Printing Telegraph and the New York New England Telegraph, which was backed by the irrepressible O'Rielly. The price for Boston-New York traffic immediately fell to 2 cents a word, and then to a penny per word. Not surprisingly, the Boston & New York Printing Telegraph went bankrupt and was liquidated by 1852.

These and other bankruptcies provided opportunities for the relatively established players. In 1852, the telegraph pioneer Ezra Cornell snapped up the New York & Erie, which had been capitalized at $110,000 in 1849, for $7,000. With the disappearance of competition on key lines, the survivors were able to hold the line on prices. Magnetic Telegraph, which managed to pay dividends of just 2 percent in 1851, increased its dividend payouts to 9 percent in 1852, and to a hefty 13 percent in 1853 and 1854.

As the systems matured, the ability to transmit messages to more cities through a single network became a huge competitive advantage. Consequently, systems that used Morse patents began to consolidate. One such consolidator, the Rochester-based New York & Mississippi Valley Printing Telegraph Company, was formed in 1851 and quickly snapped up 11 lines in five states in the Midwest. In 1856, it changed its name to Western Union. The next year, Western Union banded together with five other large networks, agreeing to interchange traffic and to connect only with one another. Where the cartel members competed, they successfully divided business to avoid price wars.

In 1862, five million messages were transmitted over 32,000 miles of line. And now, those who aimed to get into the business did so in a big way. In 1864, promoters started United States Telegraph, which rapidly built and bought a 10,000-mile network in the Northeast and Midwest. In a process that is likely to resonate with contemporary investors, bullish Wall Street brokers claimed the stock would rise to $150 by July 1865 – even as it was hemorrhaging cash. Instead, the share price fell from $98 in March to $20 in October. In March 1866, Western Union acquired United States Telegraph and dismissed two-thirds of its employees.

A few months later, Western Union took over the American Telegraph Company, which had unfortunately consolidated north-south connections on the eve of the Civil War. The domestic game was essentially over; Western Union commanded 37,380 miles of line and 2,250 telegraph offices.

Eventually, both technology and the busi-

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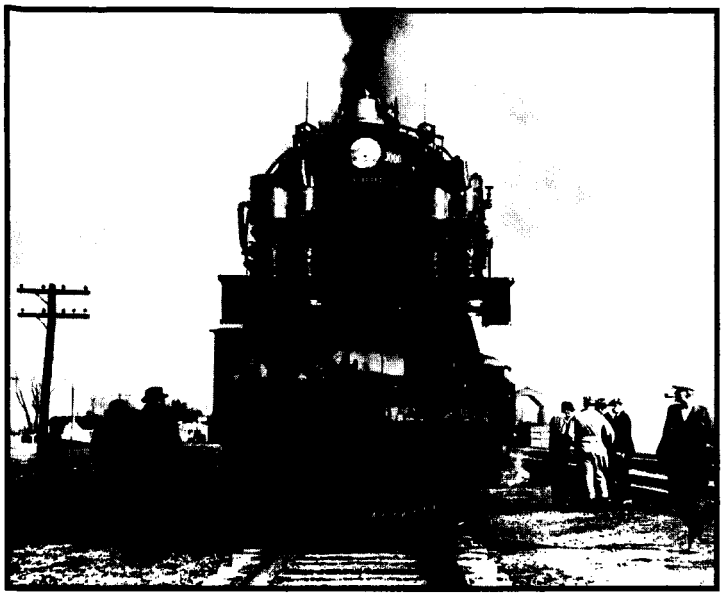

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ness model caught up to the dream. Innovations of the 1860s and 1870s – transatlantic cables, automatic telegraphy and capacity-expanding duplexing – made the medium far more efficient. Western Union continued to dominate the telegraph, controlling 90 percent of the United States telegraph market in 1915. And while investors who had initially snapped up shares of telegraph lines like the Indiana, Ohio & Illinois were left with worthless scrip, Western Union shareholders collected dividends for generations.

THE RAILROAD BOOM AND BUST, 1873-1894

On July 4, 1828, 90-year-old Charles Carroll, the last surviving signer of the Declaration of Independence, broke ground for America's first railroad, the Baltimore & Ohio. Between 1830 and 1860, a network slowly took shape between the Atlantic and the Mississippi, consisting mostly of small short lines like the B&O. In 1850, however, the federal government helped kick-start large-scale growth by making its first railroad land grant. The subsidy allowed the Illinois Central to complete a 705-mile north-south route parallel to the Mississippi River in 1856. And between 1850 and 1871 generous legislators made more than 170 million acres available to 80-odd railroads. (Nearly half of the projected lines were never built or completed, resulting in a forfeit of 35 million acres – an area roughly the size of Florida.) By 1860, the United States was linked by some 30,600 miles of track.

As with the telegraph, early railroads were plagued by the lack of a universal standard, which prevented transfers of rolling stock. In 1861, seven different gauges were used in United States and Canada, and only about half of the 351 railroad companies in North America ran on what eventually came to be the standard gauge (56.5 inches). The three great rail systems coming into New York were largely blocked from through-connections with lines that terminated in rival cities. Shipping goods through New York to points beyond would have been like flying into Newark Airport, then being required to drive to La Guardia to make a connection.

In the three decades after the Civil War, a host of developments paved the way for a massive boom in coast-to-coast rail transit. Congress continued to extend both credit and free land to railroads that aspired to connect the coasts. Railroads began to conform to a standard gauge, and new switching technologies permitted faster and more efficient operations. Wall Street grew into a money center largely to finance railroad dreams. And the iron horse was endowed with the sort of transformative power that would later be ascribed to the Internet.

"With perhaps two exceptions," the *North American Review* noted in 1867, the railroad was "the most tremendous and far-reaching

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engine of social revolution which has ever either blessed or cursed the earth." The growth in railroads, it continued, would make the 19th century "different from all others – a century of greater growth, of more rapid development."

Indeed, the newly reunited nation came to be gripped by railroad fever. Between 1870 and 1880, the investment in rails more than doubled to $5.4 billion. And between 1880 and 1890, it would double again.

existing roads in order to form giant 'self-sustaining' systems," as the business historian Alfred D. Chandler wrote.

Accordingly, in the 1880s investors laid out nearly $5 billion to increase the national rail capacity by some 71,000 miles. The resulting demand for capital led to the rise of New York as a money center and to the active trading of railroad stocks. It also paved the way for robber-baron operators to build massive fortunes by loading up companies with debt and extracting cash when they could.

By 1906, almost two-thirds of the nation's 224,000 miles of track were controlled by just seven major railroad groups dominated by industrial titans, including J.P. Morgan, the Vanderbilts and E.H. Harriman.

As with the telegraph, excess capacity was the order of the day. Within a single generation after the Civil War, not one but four railroads crossed the continent. Not all of them made it to the Pacific intact. The Northern Pacific, capitalized at $100 million, completed just 500 miles before going bankrupt in 1873. It went into receivership, and Henry Villard took control for $10 million.

Burdened with debt, Gilded Age railroads faced a constant mandate to run at maximum capacity. And in an era in which multiple lines connected key city-pairs like New York and Chicago, there was constant pressure to reduce rates to build business. Many lines offered secret rebates to large customers – a practice that infuriated less favored shippers. Still others formed regional cartels to allocate traffic and pool profits. And somewhat perversely, in the 1880s rail managers decided that the only way to ensure a continuing flow of traffic was "to construct new tracks or buy

It was difficult to make money even in good times, since railroads were plagued by excess capacity and constantly engaged in price wars. But in this period, things got worse. While the net investment in railroads quadrupled between 1870 and 1890, gross railroad revenues rose only 150 percent, from $400 million in 1870 to $1 billion in 1890. By no coincidence, the average cost of commodity transportation by rail fell from 1.925 cents per ton-mile in 1867 to 0.839 cents in 1895. In 1870, shipping a bushel of wheat from Chicago to New York cost 26.11 cents; in 1890, it cost 14.3 cents. Between 1882 and 1890, the number of passengers rose from 289 million to 520 million, but revenues from passengers increased at just half the pace.

In 1893, a financial panic set off a recession that lasted for nearly four years. Grappling with $5 billion in bond debt and excess infrastructure, many railroads filed for bankruptcy. The Richmond Terminal, whose 60 sepa-

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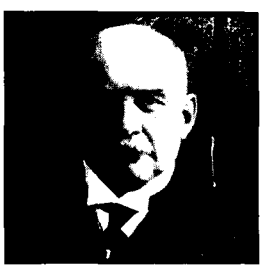
rate railroads and 8,900 miles of track made it the second largest system in the nation, collapsed. So did fabled names like the Union Pacific, the Atchison, Topeka & Santa Fe and the Philadelphia & Reading. By 1894, 192 railroads representing 41,000 miles of track and a total capitalization of $2.5 billion – about one quarter of the industry – were in receivership. In 1895, only 36 percent of railroad stock was paying dividends. The S&P rail index fell from 17.81 in 1887 to 12.95 in 1894. It wouldn't reach the 1887 level again until 1899.



The result was a long workout period in which J.P. Morgan and other financiers recapitalized the failed companies and created larger entities. By 1906, almost two-thirds of the nation's 224,000 miles of track were controlled by just seven major railroad groups dominated by industrial titans, including J.P. Morgan, the Vanderbilts and E.H. Harriman. Stockholders in many of the smaller railroads ended up with nothing.

After the panic of 1893, the pace of rail construction slowed drastically. And by 1917, with autos beginning to challenge the passenger rail business, the rate of rail abandonment for the first time surpassed the rate of construction. The number of miles of track peaked in 1916, at 254,000 miles, and has slowly receded ever since.

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TELEPHONE'S ERA OF COMPETITION: 1894 TO 1913

Just as the railroads were failing en masse, the great era of telephone infrastructure building was getting under way. Commercial telephone got its start in 1877, when Alexander Graham Bell and his associates licensed entrepreneurs and companies to build local exchanges. Western Union entered the field the same year. Bell licensees and Western Union constructed rival systems in New York, Buffalo and 18 other cities. But in 1879, Bell acquired Western Union's telephone operations and essentially had the local field to itself. By 1880, Bell licensees had established service to 61,000 phones in 998 American towns.

Between 1881 and 1895, the number of Bell telephones installed grew at an annual rate of 9 percent. But once Alexander Graham Bell's original telephone patents expired in 1892, "telephone was up for grabs" (as Bell's 1893 annual report put it).

In small towns that Bell had neglected – places like Noblesville (Indiana), Wichita Falls (Texas), and Rock Falls (Illinois) – newly empowered entrepreneurs raised capital to build local exchanges. Between 1894 and 1902, 3,039 commercial companies and 979 so-called mutual companies were formed. By 1904, independents competed against Bell licensees in every significant Texas community except Dallas.

This competition supercharged the telephone industry. From 1883 to 1893 the number of telephones in the United States doubled, and in the next decade the number increased sixfold. Independents grew even more rapidly than the Bell system, going from 30,000 phones in 1895 to 1.84 million in 1905. By 1902, some 100 companies were manufacturing telephone equipment.

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FIBER-OPTIC BUBBLE

In 1900, when the Bell System was recapitalized as AT&T, it had 800,000 phones and assets of more than $120 million, compared with 600,000 phones and assets of $55 million

for the independent phone systems. Indeed, most of the competitors were tiny. In 1905, an AT&T official estimated that the average capitalization of 1,916 independent phone companies was just $42,000.

As building declined, however, the aggressive independents forced down the price of telephone service. In Connecticut, the cost of renting a phone fell 34 percent between 1891 and 1902. In 1898, the Indianapolis Bell licensee charged $72 per year for business phones and $48 per year for residential service. The New Telephone Company, organized with local capital, charged half the Bell rates. By 1906, each had 10,000 subscribers. In 1903, the independents had more subscribers (about two million) than the Bell System, with about 1.28 million. Such was the progress of the independents that in 1905 an electrical engineer turned writer was inspired to title his book, *How the Bell Lost its Grip.*

Of course, the growth came at a price. Many independents lost money. AT&T suffered, too; operating revenue per Bell telephone station fell from $88 in 1895 to $63 in 1900 and to $43 in 1907. The price of the company's widely held stock fell from $186 in 1902 to $88 in 1907, and its debt rose from $60 million to $200 million in the same period.

But the independents lacked the ability to build the intercity networks that business customers began to demand. And since Bell maintained a relatively strict policy of denying interconnection, it was literally impossible for an independent customer in Pittsburgh to place a phone call to a neighbor with a Bell phone – let alone to a relative in New York.

In 1907, AT&T's newly installed president, Theodore Vail, began to acquire down-at-the-heels independents. Like the railroaders before him, he invested significant resources to transform the system's thousands of local networks into an integrated national network. Meanwhile AT&T's banker, J.P. Morgan, worked to cut off credit to troubled independents so Vail could offer to buy them at distress prices. Vail also offered concessions to cooperative independents, allowing them to connect to Bell's network. In 1906, only 300,000 independent telephones interconnected to Bell. By 1908, the number had risen to 1.2 million.

In 1912, complaints by independent phone companies about AT&T's practices led to a federal antitrust investigation. Instead of fighting, AT&T struck a deal. Under the 1913

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Kingsbury Agreement, Ma Bell agreed to stop buying telephone companies, to allow some toll connections to unconnected independents, and to provide universal service in exchange for ratification of its dominant market position. The era of competition was over, and in 1921 Congress formally exempted AT&T from the Sherman Antitrust Act.

By 1916, the Bell System had 19,800 miles of line and some $260 million in revenues; the dwindling number of independent companies had 3,900 miles between them and $49 million in revenue. For the next half century, the Bell System's domination of the American phone market would go unchallenged.

Investors in Bell and the independent companies may not have fared well in the era of competition. But consumers fared better.

Investors in Bell and the independent companies may not have fared well in the era of competition. But consumers fared better. For in those years, the telephone evolved from a luxury into a household item. Telephone penetration rose from 7 per 1,000 people in 1897 to 123 per 1,000 in 1920. And as the goal of universal service neared reality, the telephone wires emerged as a remarkably important enabler of commerce – local, national and international.

FINAL THOUGHTS

Through much of the 20th century, successive generations of network technologies – radio, television, cable and wireless – departed from this boom, bust and consolidation model. Radio and wireless and, to a lesser degree, television and cable did not require the sort of capital-intensive networks that these other technologies did, because the signals traveled all or part of the way through the air. More significant, these technologies arose when the regulatory state was relatively strong and active. And in each instance, federal, state and local governments got involved at an early stage, awarding licenses and assigning portions of the spectrum, designating franchisees for geographic regions and, in some instances, deliberately limiting competition. This pre-emptive rulemaking essentially forestalled the sort of exuberant, unregulated and unfettered infrastructure booms that had been so prevalent in the 19th century.

But events again conspired to set the stage for an infrastructure boom and bust. When the Internet burst on the scene in the late 1990s, capital markets were deep and Washington was loath to regulate the new industries. Fittingly for the era of 24/7, the investment cycle took place far more quickly than it had in the 19th century. This time, companies made the round trip from startup to multi-billion-dollar market capitalization to bankruptcy in the space of two or three years. But the results were the same.

Today, millions of miles of optical fiber cable lie fallow – much of it, ironically, buried along the rights-of-way of abandoned railroads. Large well-capitalized companies stand poised to take over the assets at a fraction of their cost of production. And while investors have taken a huge hit, the investment boom significantly lowered prices for a service that many businesses regard as essential. The more some things change, the more they stay the same.

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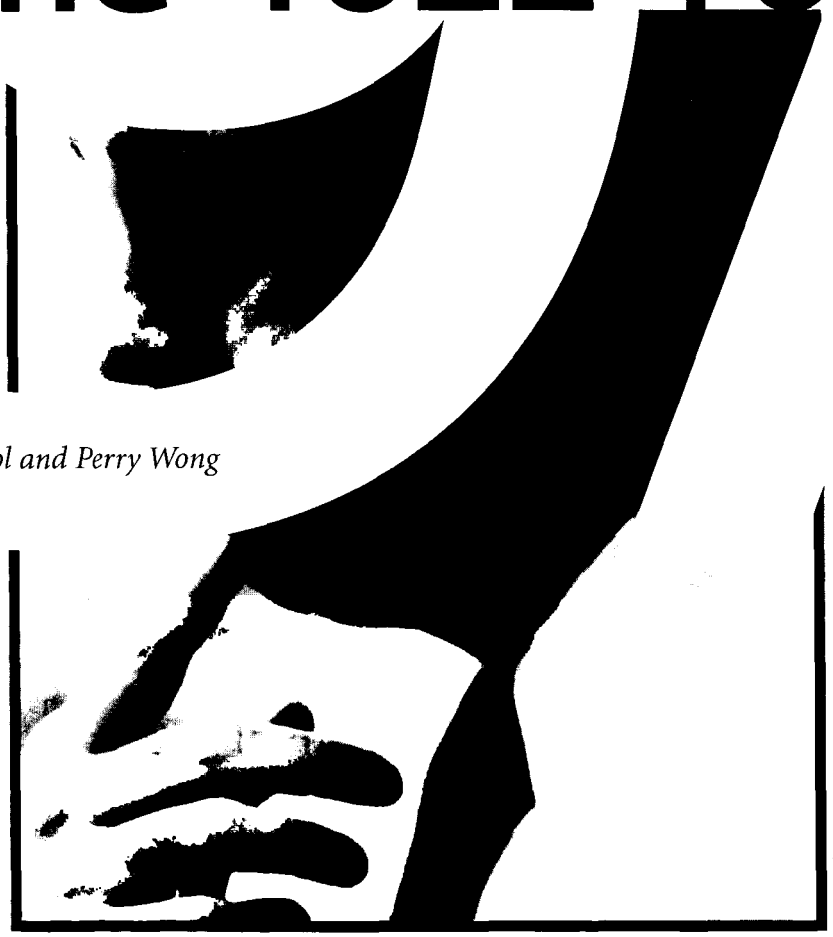
The Toll for

By Ross DeVol and Perry Wong



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Metropolitan Economies

We have all come to know more than we wish about the pain caused by terrorism. Yet while violence generates terrorism's most immediate and enduring impact, the economic ripples can register far more widely. Egypt's tourism industry has never really recovered from attacks on tourists by religious fundamentalists in the last decade. And suicide bombers have severed most links between the Israeli and Palestinian economies, effectively shutting down once-thriving cottage industries on the west bank of the Jordan River.

By the same token, the impact of the September 11 attacks on the World Trade Center and the Pentagon are still pulsing through the American economy. And because these effects are concentrated in a handful of sectors, the consequences for individuals and localities can be quite dramatic: think of restaurant workers in Honolulu and Miami, or baggage handlers at O'Hare and LAX.

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METROPOLITAN TOLL

For New York, perhaps the best analogies for recovery are natural disasters, such as the Northridge earthquake in Los Angeles and Hurricane Andrew in Miami. But not quite: as the rebuilding commences, economic activity generally recovers in the quarter following the event. New York City, however, will be coping with the rubble for many months, delaying reconstruction. And in light of the psychological impact on business, it is far from clear that the office capacity lost in lower Manhattan will be replaced anytime soon.

Another important difference is that the disaster in New York affects business confidence in every major city. When Los Angeles suffers an earthquake, Houstonians don't worry about the aftershocks.

Transportation has also been affected in complex ways. Consumers are, of course, apprehensive about the safety of airline travel. But the economic impact of heightened security at airports may be more enduring, since screening has increased transit times and rendered airline travel less appealing. Moreover businesses, already reeling from years of rising airfares, have responded by reassessing travel needs.

Note, too, that the recession, on which Sept. 11 is layered, has been felt disproportionately by a handful of cities. This is due to the unusual nature of the downturn, which is very much a business investment-led recession. A collapse of investment in information technology products and services, precipitated by excessive spending earlier, weighed heavily on the economy before the attacks. Tech-centric areas, such as Silicon Valley, Austin, Seattle and Portland, have been reeling for many months. Meanwhile, more traditional manufacturers of heavy capital goods are now feeling the pain. Manufacturing centers like Cleveland and St. Louis in the Midwest, and Atlanta, Greenville-Spartanburg-Anderson, SC and Birmingham in the South have been victims.

We expect financial services to lose 96,000 jobs in 2002 – again compared to the baseline of a no-terrorism recession.

The consensus forecast is for a modest recovery to begin in the second quarter of 2002. Nevertheless, 2002 will witness additional declines in employment – especially relative to what the economic environment would have been in the absence of Sept. 11. And it is going to take considerably longer for some local economies to escape the doldrums.

SECTORAL IMPACT

A locality's economic exposure to the consequences of Sept. 11 is largely determined by the composition of its industrial base. The most directly affected industry is travel and tourism. Travelers generate jobs and a substantial share of income for millions of Americans.

We've estimated the impact using standard

ROSS DEVOL is director of regional and demographic studies and PERRY WONG is a research economist at the Milken Institute.

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tools of regional economic analysis. Of the total direct estimated metropolitan job loss of 760,000, relative to the baseline (no terrorism scenario) in 2002, two-thirds are in travel and tourism and related sectors. Overall, roughly 1.6 million jobs will be lost in America's metropolitan economies as a result of Sept. 11. The largest percentage declines are in air transportation (roughly 20 percent), followed by amusement and recreational services, and hotels and motels. The most exposed metros are destinations with high concentrations of foreign tourists as well as domestic tourists who generally arrive by air. New York is the (unfortunate) exception because many tourists who could come by car or train are staying away anyway.

Localities dependent on international trade are also feeling the pain. Global growth is slowing, and Japan and much of the rest of Asia are in recession. Europe is experiencing a dramatic reduction in growth. Supply chains are being shortened and terrorist concerns are harming economies around the globe.

Commercial aircraft orders have been cut as airlines lay off workers and reduce manufacturing capacity. We expect that aircraft and aircraft parts employment in metropolitan areas will be reduced by 42,000 compared to a no-terrorist attack scenario – not a very large number in the context of the whole economy, but a big hit for the handful of cities in which aircraft production is concentrated.

Entertainment and advertising are also feeling the consequences of September 11. As a hedge against possible actors' and writers' strikes last spring, many studios overproduced films and TV programming early in 2001. The strike was avoided, but production activities still fell during the spring and summer. Before they could resume production in the fourth quarter, the uncertainty associated with the terrorist attacks led to cutbacks. And layoffs are percolating through every segment of the entertainment industry.

With corporate advertising budgets being cut, television ad revenues are in deep decline. Theatrical productions are suffering in tourist destinations, particularly in New York. We estimate that entertainment and advertising related sectors will lose 150,000 more jobs than in the baseline no-terrorism recession.

Financial services, a swath of industries including securities, insurance and real estate brokerage, were adversely impacted by the attacks. New York, which is headquarters to most of the nation's major financial services

WHERE THE JOBS AREN'T

	NET JOB LOSSES (In thousands)			
	2001	**2002**	**2003**	**2004**
Eating & Drinking Places	-17.95	-150.56	-174.18	-105.22
Hotels & Motels	-49.17	-140.61	-99.40	-38.64
Miscellaneous Amusement & Recreational Services	-33.00	-100.36	-76.28	-42.30
Air Transportation, Scheduled	-46.16	-85.89	-35.19	-28.63
Advertising	-13.32	-79.30	-52.07	-35.47
Theatrical Producers, Bands & Recreational Services	-10.53	-52.77	-34.67	-18.61
Aircraft & Parts	-3.44	-42.41	-49.05	-44.36
Airports & Airport Terminal Facilities	-9.98	-19.19	-13.29	-0.24
Fire, Marine & Casualty Insurance	-4.77	-17.44	-19.77	-11.85
Life Insurance	-9.32	-17.04	-12.64	-6.38
Medical Services & Health Insurance	-8.07	-14.49	-14.93	-7.30
Radio & TV Broadcast Stations	-3.18	-12.68	-4.29	-3.39
Arrangement of Passenger Transport	-7.56	-10.27	-2.32	-0.03
Museums & Art Galleries	-5.09	-9.31	-0.45	-0.60
Communications Equipment	-0.48	-7.02	-5.21	-2.20
Cable & Other Pay TV Services	-2.27	-4.74	-0.44	-0.03
Ship & Boat Building and Repair	-0.23	-3.31	-2.46	-1.04
Railroads	46.93	0.57	0.35	0.28
Search & Navigation Equipment	0.66	3.47	2.58	1.09
Guided Missiles & Space Vehicles	4.42	4.42	6.63	3.98
Total Cumulative Employment Loss	**-172.53**	**-758.92**	**-587.07**	**-340.97**

Ranked by Net Job Losses in 2002.

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firms, was hit directly by the destruction of property, while others felt immediate losses from suspended market activity. Insurance firms' profits were sliced by the payouts to victims' families. We expect financial services to lose 96,000 jobs in 2002 – again compared to the baseline of a no-terrorism recession. This represents a loss of 1.4 percent of all jobs in the industry – with a considerably higher percentage in New York.

Some sectors, and thus some regional economies, will see job growth related to the attacks. These include producers of goods and services required to battle terrorism – high-tech reconnaissance aircraft, unmanned craft sensors, ultrasensitive communications devices and other precision instrumentation. These high-tech sectors should see an increase in employment of about 8,000.

TOURISM DESTINATIONS HIT HARDEST

	PERCENTAGE JOB LOSSES			
	2001	2002	2003	2004
Las Vegas NV	-1.06	-4.98	-2.42	-0.79
Myrtle Beach, SC	-0.71	-3.60	-1.85	-0.74
New York-Newark NY-NJ-PA	-1.01	-3.42	-2.07	-1.10
Reno NV	-0.84	-3.15	-1.89	-0.72
Atlantic-Cape May NJ	-1.99	-2.98	-2.04	-1.94
Orlando FL	-0.62	-2.85	-1.59	-0.68
Wichita KS	-0.26	-2.81	-2.73	-2.14
Flagstaff AZ	-0.55	-2.61	-1.33	-0.51
Honolulu HI	-1.41	-2.57	-1.83	-1.48
Fort Worth-Arlington TX	-0.42	-2.45	-1.91	-0.88
New London-Norwich CT	-1.32	-2.36	-1.60	-1.46
Anchorage AK	-0.52	-2.33	-1.58	-0.82
Seattle-Bellevue-Everett WA	-0.33	-2.30	-1.79	-1.19
San Angelo TX	-0.31	-2.23	-1.11	-0.54
Dubuque IA	-0.30	-2.22	-1.11	-0.39
Biloxi-Gulfport-Pascagoula MS	-0.83	-2.11	-1.34	-0.91
Naples FL	-0.40	-2.01	-1.04	-0.46
Panama City FL	-0.39	-2.01	-1.05	-0.44
San Francisco CA	-0.35	-1.94	-1.18	-0.61
Miami FL	-0.36	-1.86	-1.37	-0.45

Ranked by Projected Job Losses in 2002.

WHERE WE GET THE NUMBERS

The Milken Institute's metropolitan area econometric models incorporate structural linkages between "export" sectors and dependent supplier industries derived from an input-output framework. Export sectors, such as casinos and commercial aircraft, produce goods and services that are primarily consumed outside the local economy. These export industries serve national rather than local markets. The income they generate, however, is concentrated in local economies.

The models allow an assessment of the ripple effects (in economic jargon, the multipliers) from the directly affected industries as they spread through local economies. The income from export sectors, such as travel and tourism, multiplies through the indirect effect on the demand for construction, local transportation, utilities and communications, wholesale and retail trade, government services and so forth.

METROPOLITAN IMPACTS: SOME HIGHLIGHTS

With its large gambling industry and related infrastructure primarily accessible by air, Las Vegas is the single most vulnerable metropolitan economy. Lodging employment in Las Vegas is 16 times more important to the local economy than to the national economy. We expect employment in Las Vegas to fall by 5.0 percent in 2002 relative to the baseline, compared to 1.4 percent for the average metro area. Approximately half of these jobs should be recovered in 2003.

Myrtle Beach, SC is the second most impacted metro area; we expect employment to fall 3.6 percent. This beach resort has the highest concentration of restaurant employment in the nation. It ranks eighth in concentration of amusement parks and recreational

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services employment (three times greater than the US average) and fourth in hotel employment concentration (six times greater than average).

The New York-Newark metro area ranks third in job loss at 3.4 percent in 2002. However, in absolute terms, it is the biggest job loser by far, with a projected decline of almost 150,000.

Obviously, New York City's economy has been severely disrupted. It will lose some 31,000 jobs in the finance, insurance and real estate sectors in 2002 – most of them high-paying jobs. Advertising is another important industry for the New York economy, with 5.3 times as many jobs per capita as for the nation as a whole. The same goes for entertainment employment (14th in the nation), and museums and art galleries (15th in the nation). Service-sector employment is projected to fall by 68,000, and wholesale and retail employment by 24,000 in 2002. All told, wage and salary income in the New York metro area will decline by $9.1 billion in 2002.

Reno is fourth on our list with a 3.2 percent job loss expected for 2002. Reno ranks third nationwide in concentration of hotel and motel employment, and 18th in concentration of scheduled air transportation employment.

Atlantic City-Cape May ranks as the fifth most impacted metro area with 3.0 percent loss of jobs. It has the distinction of having the highest concentration of hotel and motel employment in the country – a whopping 20 times greater than the US average. Atlantic City avoided being the hardest-hit metro overall only because so many tourists arrive on the boardwalk by car.

Orlando, home to Disney World and other theme parks, is the sixth most impacted with a 2.8 percent job decline projected. Next comes Wichita, which has the highest concentration of aircraft and aircraft parts employment in the nation. Flagstaff ranks eighth on the list, thanks to its dependence on tourists from distant places. Honolulu, where wage income is expected to decline by about $360 million in 2002, is ninth on the list. Fort Worth-Arlington rounds out the top 10 on economic impact stemming from Sept. 11. The Fort Worth airport is a major airline hub, and the city is heavily dependent on aircraft and parts production.

In the next tier, Seattle-Bellevue-Everett stands out at 13th. Thanks to Boeing, the Seattle region is the second-most dependent metro on aircraft and aircraft parts production employment in the nation. San Francisco ranks 19th overall on economic impact with a job loss of 1.9 percent projected for 2002. Miami rounds out the top 20.

LOSSES BY METRO AREA

	JOB LOSSES IN THOUSANDS			
	2001	2002	2003	2004
New York-Newark, NY-NJ-PA	-43.66	-149.27	-91.32	-48.88
Los Angeles-Long Beach, CA	-10.14	-69.01	-49.45	-33.94
Chicago IL	-8.52	-68.27	-41.90	-17.30
Las Vegas NV	-8.36	-40.77	-20.75	-7.04
Boston MA	-4.14	-36.08	-20.78	-7.24
Seattle-Bellevue-Everett WA	-4.80	-33.94	-27.05	-18.26
Atlanta GA	-4.59	-32.17	-20.40	-8.96
Washington DC-MD-VA-WV	-2.69	-31.60	-19.49	-9.29
Detroit MI	-3.70	-31.43	-18.96	-6.33
Dallas TX	-4.30	-29.30	-18.47	-8.70
Houston TX	-4.92	-29.04	-18.32	-8.52
Phoenix-Mesa AZ	-4.23	-27.79	-17.72	-9.09
Orlando FL	-5.79	-27.03	-15.44	-6.75
Philadelphia PA-NJ	-1.96	-26.99	-16.23	-5.98
Orange County CA	-3.39	-26.61	-15.23	-6.80
St. Louis MO-IL	-2.42	-22.14	-15.10	-7.29
San Francisco CA	-3.88	-21.77	-13.49	-7.07
Fort Worth-Arlington TX	-3.37	-20.27	-16.18	-7.59
Miami FL	-3.68	-19.52	-14.61	-4.83
San Diego CA	-3.22	-19.14	-11.51	-5.03

Ranked by Projected Job Losses in 2002.

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A Bull Market in...

Making Money in Environmental Derivatives

By Ricardo Bayon

Glenn Hawes owns a 900-acre plot of land in California that has been in his family for three generations. He used to lease the land for cattle grazing, but recently found what may be a much more profitable undertaking: a "conservation bank" that will protect the land's natural ecosystems. Thanks to incentives created by environmental laws, the bank could one day generate handsome revenues for Hawes. He has already collected $300,000 from customers including Safeway and Wal-Mart. With time, he can expect to raise 30 times that amount just for protecting the environment.

Meanwhile, in a small corner of southeastern Georgia, International Paper is busy doing what smart companies everywhere dream about: transforming a chronic environmental liability into a marketable asset. In this case the liability/asset is an endangered bird: the red-cockaded woodpecker (*Picoides borealis*). IP is breeding woodpeckers, partly in the hope of one day selling "woodpecker credits" for as much as $250,000 each. Woodpecker credits have already traded for $100,000 on a market that resembles a nascent Chicago Board of Trade.

Finally, in the Canaan Valley of West Virginia, Allegheny Power is busy changing the way forests and wetlands are valued. It is putting the finishing touches on a deal to sell 12,000 acres of ecologically important land to the federal government. But it is not just charging the government for the land, it is planning to take a $16 million tax write-off for the "unique environmental values" of the natural ecosystems found in the Canaan Valley.

What makes all of this possible – the alchemy that has turned Hawes, IP and Allegheny into accidental environmentalists – is a phenomenon known as "mitigation

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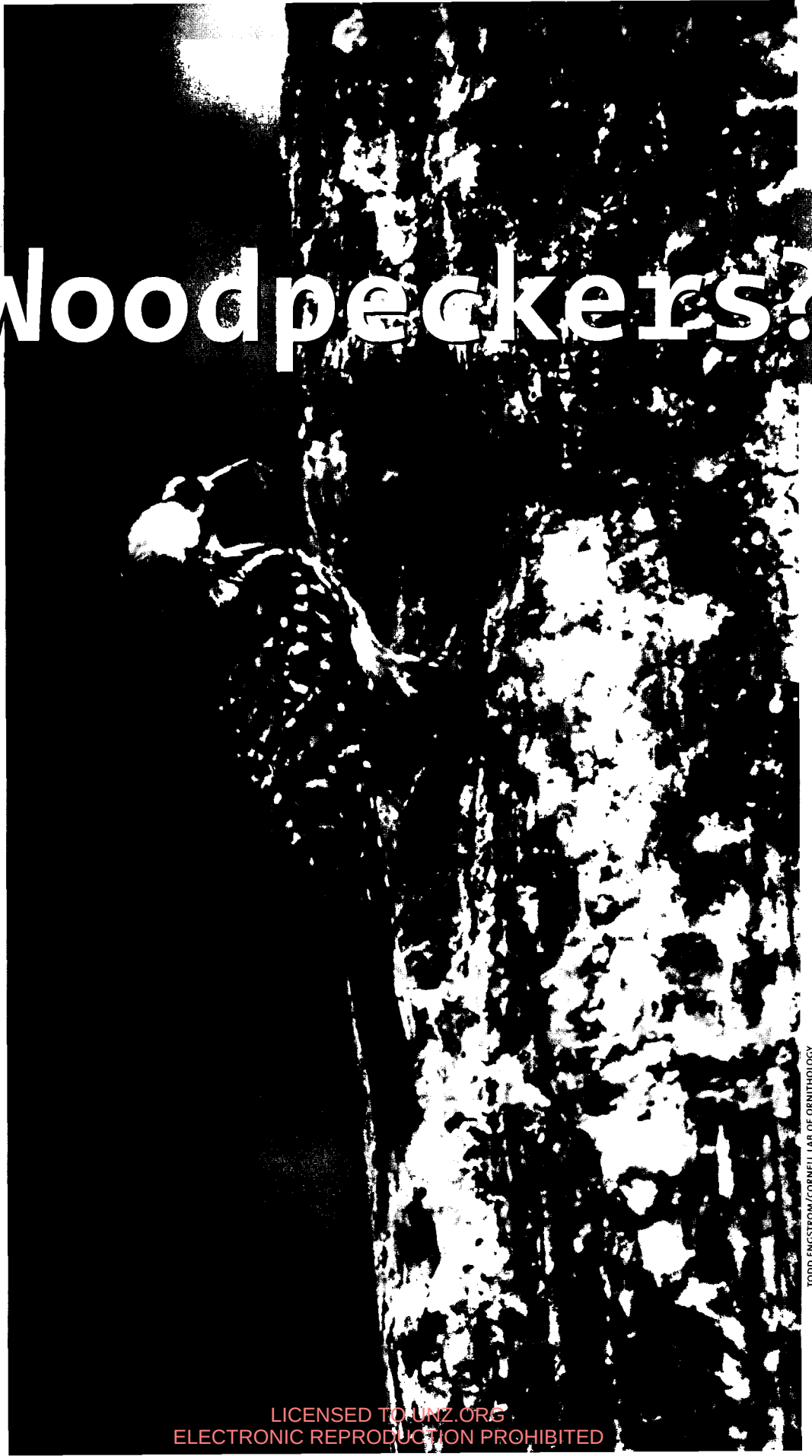
Woodpeckers?



TODD ENGSTROM/CORNELL LAB OF ORNITHOLOGY

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banking." The idea is to take living plants, animals and ecosystems and turn them into fungible assets that can be sold through newly formed markets.

MITIGATION BANKING

To understand how mitigation banking works, go back to the passage of the Clean Water Act and the subsequent involvement of United States Army Corps of Engineers in wetlands management. Approved in 1972, the act was designed (among other things) to minimize damage to wetlands. It set about achieving this goal by prohibiting the discharge of fill or dredged material into wetlands without a permit from the Army Corps.

Before granting a permit, however, the Corps must assay the potential impact. First, it must decide if the damage is truly unavoidable – whether there is any benign alternative that is practical. Second, if the Corps determines that the damage is unavoidable, it must look for ways to minimize harm. Finally, the Corps must require unavoidable harm to be "mitigated." If a project harms a wetland at point A, the developer is required to compensate by creating, restoring or – in rare cases – protecting a similar wetland somewhere else.

This has led to the creation of an environmental currency: the wetland mitigation credit. And the credit, in turn, has created a variety of businesses specializing in enhancing or restoring wetlands in order to sell the credits to needy developers.

The General Accounting Office estimates that developers have paid $64 million to mitigate damage on 1,440 acres of wetlands. Since a report by the National Academy of Sciences estimates that 24,000 acres were subject to mitigation from 1993 to 2000, a bit more than $1 billion was probably spent to obtain permits.

That suggests wetlands mitigation is a good business. But does it actually protect the environment? Julie Sibbing of the National Wildlife Federation is skeptical. "The concept is a good one," she acknowledges, "but it is not being implemented correctly."

Sibbing argued that the availability of mitigation credits had made it more difficult to tell whether the damage to a particular wetland is truly unavoidable. In theory, she said, the Army Corps must make sure that damage is unavoidable but, in practice, the Corps often finds it easier to require mitigation instead of "just saying no."

Another problem, she added, is that developers are sometimes given permits to damage a wetland before the mitigation is undertaken. This, coupled with inadequate monitoring and verification, often means that developers do not deliver on their promises.

But not everyone is skeptical. Doug Lashley, president of Greenvest, a company that specializes in valuing ecological assets, said much of the criticism is off the mark. Some development is unavoidable, he said, and in many cases mitigation represents the best possible outcome. "Most wetlands mitigation," he explained, "is done for public projects such as the construction of highways, airports, etc. Sooner or later these projects will be done – they are unlikely to be completely shelved – so mitigation allows us to get some environmental benefit from what is essentially an inevitable loss of wetlands."

Lashley claims that when the mitigation is done through "wetlands banks," using large plots of land to mitigate for dozens of small development projects, the process can be extremely successful. In these cases, he said, society is exchanging small, usually nonvi-

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STILLWATER PLAIN CONSERVATION BANK

GLENN HAWES

Mitigation banking is altering the way builders and developers analyze project viability to include ecological values.

able, wetlands for larger, more ecologically valuable systems.

Additionally, the benefit of mitigation may come in a variety of subtle forms – for example, by setting a price on the destruction of wetlands, mitigation banking incorporates these ecosystems into the market system. When wetlands destruction costs in the ballpark of $44,000 an acre, developers are likely to think twice before causing the damage. Thus, mitigation banking is altering the way developers analyze project viability to include ecological values.

THE COASTAL CALIFORNIA GNATCATCHER

Wetlands mitigation using a credit system has sparked imitators. Consider the coastal California gnatcatcher. Before 1995, because of increased development in the songbird's coastal sage scrub habitat, the population was shrinking rapidly. California decided the only solution was to protect areas of coastal sage scrub that were particularly important to the gnatcatcher. So it set about trying to create a system of preserves on coastal sage scrub. But there was simply not enough public money to protect all the crucial areas. So California developed an alternative approach.

It first began in 1993, when the gnatcatcher was finally added to the endangered species list and when Bank of America foreclosed on a 263-acre parcel in San Diego County known as the Carlsbad Highlands. Because this property was important habitat for the gnatcatcher, few believed it would be possible to build on the land. The bank decided to look for other options.

Meanwhle, the California Department of Transportation found itself saddled with a

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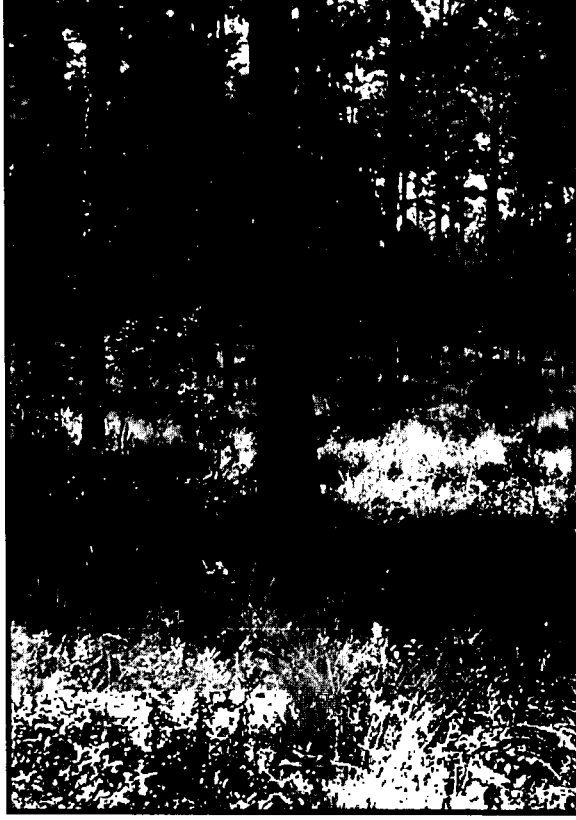
gnatcatcher problem of its own. The agency was building a highway on prime gnatcatcher habitat and, given the bird's new endangered status, the agency was obliged to mitigate damages. CalTrans agreed to pay Bank of America an undisclosed sum to put a conservation easement on 83 acres of its property – thereby allowing the agency to proceed with the construction of its highway. Two years later, the Carlsbad Highlands became the state's first government-sanctioned conservation bank. It has since sold all of its available gnatcatcher mitigation credits (about 180) at $10,000 to $15,000 apiece. Today, mitigation credits sell for upward of $25,000 each in San Diego County.

Since the creation of the Carlsbad Highlands Conservation Bank, Californians have created some 40 conservation banks. And many more are on the way. According to Deblin Meade, an expert on conservation banking who works in the Sacramento office of the U.S. Fish and Wildlife Service, the conservation banks have been extremely successful at protecting some of the state's most endangered species. Echoing Lashley's views, she argued that the banks have allowed the destruction of small chunks of habitat whose value to wildlife is limited in return for the permanent protection of large parcels more suitable for endangered plants and animals.

Meade added that there are a number of differences between California's conservation banks and the wetlands mitigation banks around the country. "All of California's banks have tight conservation easements attached to them," she noted – "easements that are held by the government or by nonprofits." In other words, once all of a bank's conservation credits are sold, the land is managed as a nature preserve in perpetuity. This is possible, she pointed out, because part of the money from



the sale of the credits (usually 10 percent) is set aside as an endowment, the return from which is used to pay for the reserve's ongoing management.

THE STILLWATER PLAIN CONSERVATION BANK

This is exactly how Glenn Hawes is operating his Stillwater Plain Conservation Bank. In 1995 the California Department of Fish and Game identified Hawes's land as having an extremely high proportion of unique and endangered wetlands. This meant the development options were very limited. Using the land for housing (something Hawes had considered in the 80s) was no longer economically viable. On the other hand, Hawes did own a newly marketable commodity: endangered wetlands. This gave him the option to turn his land into a conservation bank and sell credits to others seeking to mitigate development impact.

"To be frank," Hawes said, "when I first heard about the idea of a conservation bank,

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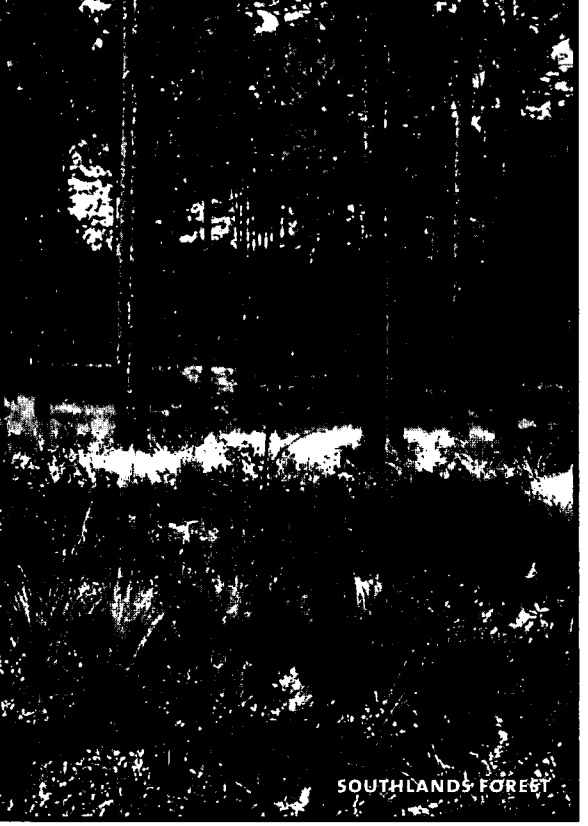

SOUTHLANDS FOREST

I was a bit scared." Still, not seeing other options, he decided to give it a try. Hawes said the process was slow, bureaucratic, costly and painful. But after six long years, the bank was finally approved by the state government in the spring of 2001. By the end of that year, Hawes had sold five mitigation credits. Although Hawes won't say how much money he has collected, each credit sells for $65,000 to $70,000. And he may be able to carve as many as 150 credits from his 900 acres.

"At first people were skeptical of what I was doing," Hawes recalls. "They didn't understand how I could make money conserving the environment." But now he has become renowned as an entrepreneur with the ability to transform lemons into lemonade.

THE RED-COCKADED WOODPECKER

Which brings us back to International Paper and the red-cockaded woodpecker. After seeing how California was using mitigation banking to protect endangered species, a number of organizations began exploring the use of similar mechanisms at the national level. One was Environmental Defense, a nonprofit group based in Washington.

CRAIG HEDMAN

Michael Bean, senior attorney at Environmental Defense, explained that the red-cockaded woodpecker is a perfect species for mitigation banking. These birds, he noted, thrive only in forests of very old pines that are regularly ravaged by fire to clear out the underbrush. And they need large areas of land – between 75 and 150 acres per group – on which to feed. Currently, red-cockaded woodpeckers survive in a few large populations across the Southeast, as well as in a large number of smaller, more fragmented populations on some very degraded habitats. These small populations are not likely to survive. Thus, unless the land is managed and fires are allowed, the birds will disappear.

With this in mind, Bean and his colleagues thought mitigation banking would give them an opportunity to trade the smaller, doomed populations living on unmanaged habitat for larger, more aggregated populations living on managed habitat – a recurring theme in discussions of mitigation banking.

Just as Bean was looking at how mitigation banking could serve the red-cockaded woodpecker, International Paper began looking for ways to resolve its woodpecker problems. Among the hundreds of thousands of acres that International Paper manages, the company found it had 18 family groups of the woodpecker spread across 1,300 acres of land in four states: Georgia, Louisiana, South Carolina and Alabama. This effectively put large chunks of IP land off limits to development.

IP realized that if it could somehow aggregate the 18 groups of woodpeckers on one plot, it could free up a lot of land. But moving woodpeckers is no easy proposition – many birds don't survive the voyage or simply fly

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away once they have been resettled. So IP decided that the best way to achieve its goals was to breed woodpeckers somewhere and then use these new birds to mitigate harm to the old ones.

It found the perfect breeding spot in southwest Georgia, in an IP experimental forest called the Southlands Forest Preserve. Southlands consists of 5,300 acres of 70- to 80-year-old pines, a relatively sparse underbrush that is kept clear by regular fires and – since the company decided to turn it into a woodpecker haven – at least 31 red-cockaded woodpeckers.

Before 1996, there were only three of the birds at Southlands. "And these three," said Craig Hedman, manager of forest ecology and water resources at International Paper, "were doomed to extinction since they were all male."

Since then, IP has been importing birds from other reserves in Georgia and Florida. And every year more red-cockaded woodpeckers are born there. Meanwhile, the other 16 groups of woodpeckers on IP land remain intact, although the company has had a permit to harm these birds since 1999. "We have decided to take a cautious approach," Hedman explained. "We want to be sure Southlands works."

The Fish and Wildlife Service measures red-cockaded woodpeckers in groups, not as individual birds. Because IP had 18 groups on the company's land before 1996, IP's target for Southlands is to have at least 18 groups on the preserve to mitigate damage that might be done elsewhere. So far, the 30-some woodpeckers at Southlands make up nine family groups, so IP is halfway there.

Along with mitigating for woodpecker losses on its own land, IP hopes to sell woodpecker credits to others. And since Southlands can theoretically support as many as 30 woodpecker groups, IP may one day have as many as 12 woodpecker credits for sale. Given that woodpecker credits are said to be worth $150,000 and $250,000 each, Southlands could one day bring in $1.8 million to $3 million for IP. Not bad for a forest that probably wasn't going to be harvested anyway.

Given that woodpecker credits are said to be worth $150,000 and $250,000 each, Southlands could one day bring in $1.8 million to $3 million for IP.

Selling a living, breathing endangered species as a commodity may not be to everyone's liking. But Ralph Costa, the recovery coordinator for the red-cockaded woodpecker at Fish and Wildlife, said these sales are ultimately helping the woodpeckers. He manages a program that allows individuals and companies to trade in woodpeckers – a kind of Chicago Board of Trade for rare birds. Every year Costa brings together all those who have woodpeckers with those who want them.

The biggest suppliers tend to be the national parks – such as the Apalachiacola National Forest in northern Florida – and, oddly enough, Army bases like Fort Benning in Georgia and the Eglin Air Force Base in Florida. Birds from these public land "donors" are allocated by the Fish and Wildlife Service according to a clear set of criteria.

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"We're looking for recipients with large tracts of good woodpecker habitat," Costa said, "and easements or agreements that ensure that these birds will be protected for long periods of time – 30 years or so."

So far, most of the birds allocated by Fish and Wildlife have been given away for free (or in return for such in-kind services as biological monitoring), though there have been a few cash transactions. Costa explained that since national and state governments already have a mandate to conserve endangered species, they cannot sell mitigation credits – only private landowners can.

To date, there have been just a few cash transactions for woodpecker credits. The last of these involved a private developer in South Carolina, the Litchfield Corporation, which paid $150,000 to mitigate the loss of one group of red-cockaded woodpeckers on the site of a golf course and housing development. Costa said, however, that the asking price of a woodpecker credit today is about $250,000.

Tom Goldtooth, the director of the Indigenous Environmental Network in Minnesota, has a philosophical objection to the concept. "How did we get to the point," he asks, "where we think that the only way to protect nature is to turn it into a tradable commodity?"

Although Goldtooth's group is not out there protesting against this sort of thing – "we need to pick our battles, you know" – he claims that the idea of trading wetlands and woodpeckers does not "mesh with" indigenous people's thinking. "For us these things are sacred," he said, "and how can you own, let alone 'commodify,' the sacred? To us it is yet another example of how our modern society is losing touch with what is really of value."

Costa and mitigation bankers nationwide are unfazed by such criticism. For them, the ultimate proof is in whether mitigation banking helps a species survive. And by this measure, Costa said, the jury is in for the red-cockaded woodpecker.

Thanks in large part to mitigation banking, landowners are becoming increasingly interested in harboring and breeding red-cockaded woodpeckers. Before, Costa said, landowners were more likely to want to get rid of birds. Today, the supply of woodpeckers never meets the demand. "And that," he added, "is a good sign for this endangered species."

Building on the success with woodpeckers, Robert Bonnie, an economist at Environmental Defense, has helped the Mobile Sewer and Water Commission in Alabama set up a mitigation bank for gopher tortoises (where credits, by the way, sell for $3,500 per acre and a half). If such pilot programs are successful, mitigation banking might one day be applied to a wide range of species across the United States. And, just as the value of wetlands destruction is now being incorporated into project analysis by commercial land users, so, too, may the value of endangered species.

CANAAN VALLEY ECO-ASSETS

Nowhere is the potential economic impact of mitigation banking more visible than in the remote Canaan Valley of West Virginia. The valley sits on the edge of the Monongahela National Forest, just west of the Appalachian watershed. It is best known as a popular ski resort serving Philadelphia, Washington, Baltimore and parts of Virginia. Two centuries ago, the valley was near-pristine wilderness; today it is slowly being overrun with ski chalets, golf courses and second homes for wealthy urbanites.

The largest landowner in the Canaan Valley is Allegheny Power. The company bought 21,600 acres in the Canaan Valley in 1925,

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hoping to use it for a hydroelectric dam. Getting the power to a large customer base, however, would have been a problem. So Allegheny left the Valley alone.

Then, in the early 70s, Allegheny began exploring its use for a pump-storage facility, where electric motors pump water uphill at night and then recapture the energy during the day by letting it flow through turbines. Though some energy is lost in this process, the difference between the value of power at midnight and at midday can make such ventures profitable.

When Allegheny finally got around to submitting the plans for its pump-storage facility it was 1973, and to damage the local wetland the company needed a permit from the Army Corps of Engineers. The Corps refused on the grounds that the Canaan Valley contained unique remnants of boreal wetlands. For years, Allegheny tried to get this decision overturned, but finally gave up. The company was left with a large piece of land of little value to its core business.

After a restructuring in 1997, Allegheny Power created a special land management team charged with making use of marginal properties like the Canaan Valley. Richard Herd, an ecologist who is now water resources manager at Allegheny, was part of that team. Herd had earlier worked with the Electric Power Research Institute (EPRI) in California, which was developing a program to give value to what it called "eco-assets." If the Canaan Valley was ecologically unique, Herd reasoned, the company should be able to capture some of the underlying value.

Of the 21,600 acres in Canaan, Herd realized that 9,600 had a limited development potential, while 12,000 had extraordinary ecological value. So they decided to develop or sell the 9,600 and study the ecological values of the remaining 12,000. They knew that land in the Valley was selling for about $1,000 an acre, but given the unique nature of the valley's wetlands they thought they might be able to get more for the 12,000 acres.

EPRI and Allegheny spent two years conducting an academic ecological and economic study of the Canaan Valley. What they got, Herd said, was "a fairy tale." The academics estimated that the notional value of ecological services provided by the Canaan Valley was around $336 million, give or take $10 million. Allegheny and EPRI went back to the drawing board.

This time, they contracted with Lashley and Greenvest to assess the "marketable" values of the ecosystems in the Canaan Valley. In other words, Greenvest was asked to identify ecological services provided by the valley that had real markets in which value could be turned into cash.

Foremost among these, it seems, was the potential to create a wetlands mitigation bank and sell credits, as well as the potential to sell carbon sequestration credits in the newly emerging markets addressing global warming regulation. Greenvest put the value at about $16 million. "With the Lashley numbers," Herd said, "we finally had a practical, pragmatic number we could work with."

Concurrently, Allegheny discovered that the Fish and Wildlife Service was interested in buying the land in order to expand an existing wildlife refuge. Armed with the latest valuations of the area's ecological services, Allegheny began negotiating to sell 12,000 acres. But it quickly became apparent that the government was not going to pay Allegheny outright for both the real-estate and ecological values of the Canaan Valley – an estimated $32.6 million – so Allegheny began looking at other options.

The company found it could sell the land

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The academics estimated that the notional value of ecological services provided by the Canaan Valley was around $336 million, give or take $10 million.

CANAAN VALLEY

to the government for its real-estate value ($16 million) and claim a "bargain sale" tax credit for the difference ($16.6 million). While the deal had not been finalized late in 2001, the transaction is likely to take place in early 2002.

Because of its experience in the Canaan Valley, Allegheny has begun pursuing similar approaches on four other parcels in Pennsylvania, Maryland and West Virginia. "As far as we're concerned," Herd said, "this is an excellent model, one that goes a long way toward encouraging private companies to value and care for the environment."

At EPRI, the lessons of the Canaan Valley have also been taken to heart. In 2000, EPRI entered into a strategic partnership with Greenvest to create EPRI Eco-Solutions, whose mission is to help electric utilities and other private companies better understand, value and manage their environmental assets. They have since taken on a number of clients, including American Electric Power in Ohio and Progress Energy in North Carolina.

With all of this potential, it is no wonder that Bill Coleman, the manager of EPRI Eco-Solutions, waxes enthusiastic about what he calls eco-asset valuation: "These markets may still be young and mostly disaggregated," he said, "and they are certainly inefficient, but they lie at the heart of all productivity. In a few years this market could be worth billions upon billions of dollars."

"Could" does not mean "will." But Coleman is almost certainly right that, in the long term, markets for environmental derivatives will facilitate a fundamental shift in how our economy values nature.

Perhaps even Goldtooth can appreciate the irony here: as capitalism runs amok, consuming the natural world at a fearful rate, it will increasingly find that standing forests, running waters, functioning wetlands and living woodpeckers are extremely valuable, useful resources – something indigenous groups have known all along. M

ALLEGHENY ENERGY

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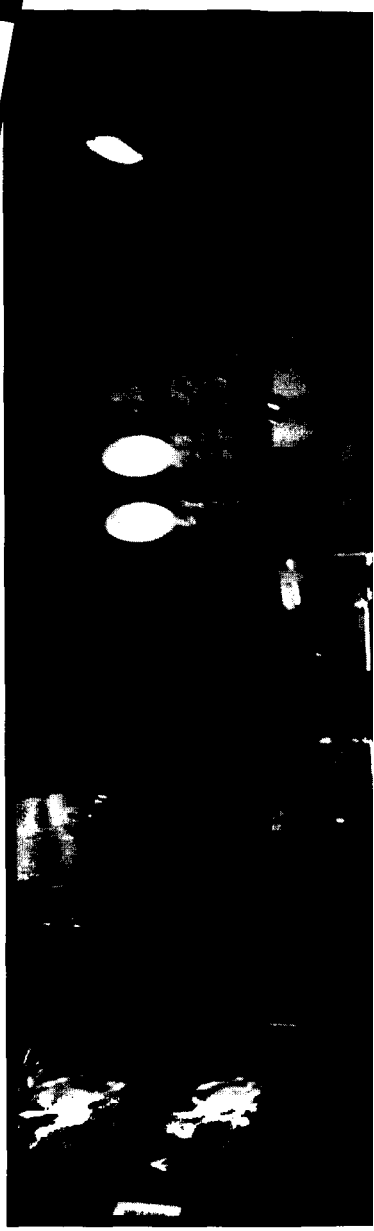
Fair Trade

Does This Emperor Wear Clothes?

by Greg Rushford



ANTIGUA, GUATEMALA – Is fair-trade coffee – the sort that you proudly drink at politically conscious java joints like Starbucks – on the level? When American consumers buy the fair-trade label, are they really raising the living standards of impoverished Third World coffee producers and saving the environment from the depredations of the rawest sort of capitalism? I came to this major Latin American coffee-growing country for some preliminary answers.

Checking it out in person seemed only prudent since neither journalists nor economists have put much effort into figuring out what the fair-trade coffee label implies. We journalists, of course, are famous for not getting Econ 101 straight. And pawing through a thick stack of glowing press accounts of "environmentally friendly" fair-trade coffee didn't turn up much in the way of explaining the underlying fundamentals. More puzzling, economists seemed leery of disturbing the conventional wisdom that good politics makes good coffee.

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AP/WIDE WORLD PHOTOS

Actually, figuring out how fair-trade coffee works didn't prove to be all that difficult – and the hype just doesn't hold up. It is not all that surprising, perhaps, that the traditional Guatemala Antigua brand at Starbucks is a higher grade coffee at a lower price than Starbucks' Guatemalan fair-trade coffee. What may surprise you, though, is that when you buy Guatemala Antigua, you are both helping deserving farmers and supporting environmentally benign agriculture.

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Advocates of the fair-trade movement want consumers to believe that discriminating purchasers are needed to defend small-farm co-ops from price-gouging middlemen. That's not implausible. After all, poor countries are often plagued by one form or another of market power.

But consumers beware: when you buy fair-trade coffee, there is slim reason to believe that you are empowering exploited farmers. However, you certainly are empowering First World activists who admire Fidel Castro's Cuba, who think the United States should dump Israel in favor of Yasir Arafat's Palestinians, and who don't see evidence linking Osama bin Laden to the terrorist atrocities of Sept. 11. Fair-trade coffee, in short, is a far darker blend than advertised.

Two fair-trade activists, Deborah James and Paul Rice, maintain there are just two types of coffee. Fair-trade coffee, representing less than 1 percent of the United States market (and up to 5 percent of the market in some European countries), is sold by the aforementioned co-ops. The other 99 percent is what they call sweatshop coffee, grown on large plantations where $2-per-day laborers endure miserable conditions. The coffee industry is thus defined by injustice.

James is fair-trade director of Global Exchange, a San Francisco-based group that has targeted big names in the coffee industry, from Starbucks (successfully) to Procter & Gamble (so far, unsuccessfully) with demands that they carry the fair-trade label. James is also a member of a panel advising the Specialty Coffee Association on how to market fair-trade coffee.

GREG RUSHFORD is the editor of *The Rushford Report*, a newsletter for trade and economic-development professionals.

Rice is executive director of the Oakland-based Transfair, another nonprofit, which certifies the fair-trade label for retailers. Transfair gets 10 cents a pound from United States roasters who handle fair-trade coffee (which amounted to about $250,000 last year, Rice says). At his suggestion, I visited a farm co-op in the remote central highlands of Guatemala near Lake Atitlan. I also visited a "sweatshop" plantation that turned out to supply Starbucks.

THE FAIR-TRADE CO-OP

My fair-trade tour guide was 33-year-old Jeroen Bollen, who is from the Netherlands. Bollen came to Guatemala seven years ago, fell in love with the country's beauty and married a local. He now manages several coffee co-ops for a fair-trade outfit called Manos Campesinas.

The co-op Bollen took me to, Ija 'tz (after the Mayan word for seed), was near San Lucas, high in the central highlands. The co-op, a small army base until Guatemala's long-running civil war ended in 1996, has 37 acres for coffee growing, which is divided into 83 family plots.

Nothing is wasted at Ija 'tz. Besides coffee trees, there are vegetables, bananas and medicinal plants – 200 different varieties of plants and trees in all. Rainwater running down the mountain is collected, as is human waste, which is mixed with banana leaves and black earth for compost.

The co-op's board of directors has seven members, three of them women, which I was told is unusual in Mayan culture. Women at Ija 'tz also run a catering service. I asked one of the co-op's leaders if he wanted his children to stay at Ija 'tz, or seek out the opportunities in a city. "We are a little more free here," he replied. "Our way of life is the farmer way; cities have problems."

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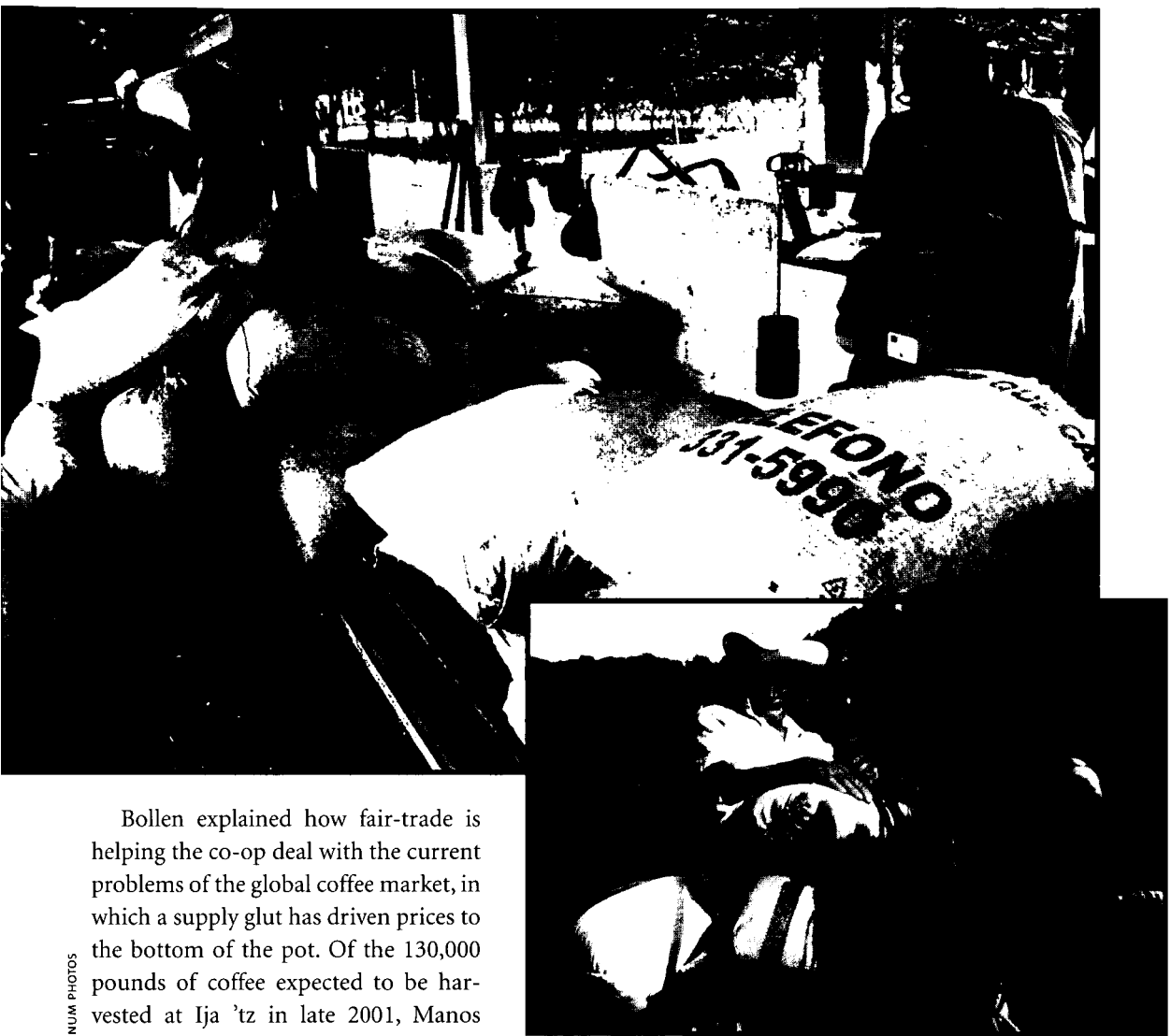

TOP: JORGE SILVA/REUTERS/TIMEPIX; BOTTOM: SUSAN MEISELAS/MAGNUM PHOTOS

Bollen explained how fair-trade is helping the co-op deal with the current problems of the global coffee market, in which a supply glut has driven prices to the bottom of the pot. Of the 130,000 pounds of coffee expected to be harvested at Ija 'tz in late 2001, Manos Campesinas was planning to help export 64,000 pounds to the Netherlands. The rest of the crop would be sold on the local market, with some of it purchased at higher-than-market prices by a local Catholic parish.

Ija 'tz is guaranteed a "fair-trade" price of $1.26 per pound for the exports. Of this, 26 cents is deducted by Manos Campesinas for export-related costs. That still leaves the farmers with $1 per pound, at a time when the world market price is just 43 cents. According to Bollen, perhaps 5,000 out of some 60,000 Guatemalan coffee farmers are members of fair-trade co-ops.

SWEATSHOP COFFEE

I also visited a sweatshop plantation near Antigua, a 250-plus acre farm that happens to sell Guatemala Antigua to high-end coffee enterprises like Starbucks. The owners freely showed me their operation, and said they were willing to speak for the record. But because of the angry reaction of the fair-trade activists when I told them what I saw, I have

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Who Lost Maya Traditions?

Activists who push fair-trade products are fond of accusing international financial institutions like the World Bank of being secretive, and corporations like Nike of being greedy sweatshop operations, raking in huge profits on the backs of miserably poor employees. By contrast, consumers who shop in two "fair-trade" stores in San Francisco run by Global Exchange are assured that the Third World suppliers to these stores pay their employees "fair" wages, and help local communities.

It is necessary to take the activists' word for this; their books are not subject to journalists' inspection. Before I went to Guatemala in September, I sent a series of e-mail messages to a business called Maya Traditions, which has a Web site claiming to be the main supplier of Guatemalan handicrafts to Global Exchange's stores. "We strive to pay a fair wage in the local context," Maya Traditions asserts. "We are also committed to helping the weavers with health care and with education for their children – needs expressed by many women."

I asked Maya Traditions' Jane Mintz: What's a fair wage? How much better off are the 100 Maya women in rural villages you employ than other local women who work for ordinary handicraft concerns? Then I asked again. And again. Might as well have asked G. Gordon Liddy to open up about his role in the Watergate burglary. All Mintz would say is that "we evaluate the pay for the women's work together with them based on the hours they are able to work in the day. Our emphasis is on keeping them in the village and working at home while caring for their families." Mintz added that

decided to neither divulge the name of the plantation, nor publish pictures of its very impressive operation.

The plantation specializes in superior shade-grown coffee, grown under gravilea trees, which protect the beans from the sun, the occasional frost, and even volcanic ash from a nearby volcano. Some 45 families live on the farm year-round, with up to 300 people brought in during the harvest season, from mid-December to March. The year-round families are given land to grow corn and beans for themselves.

The minimum wage is about $2 a day. But most workers on this plantation make about twice that, and during the harvest some pickers triple the minimum. The owners also pay into a social benefits fund for their employees, and contribute to a nearby local school.

FLAWED ECONOMICS

Manos Campesinas' Jeroen Bollen told me that it would be difficult for fair-trade coffee to dominate the coffee business. You don't have to be a PhD in economics to see why.

The problem isn't with the farm co-ops. There is certainly something to the notion that isolated, illiterate peasants can be victims of monopoly buyers – what economists call monopsonists. And as the Specialty Coffee Association's Ted Lingle explains, transportation does exacerbate the problem. "When you ship coffee in global commerce, you need a full container, which would be 250 bags," he notes. "A farmer by himself never produces 250 bags, so his coffee never reaches the world markets."

But fair-trade coffee co-ops do more than defeat monopsony and gain access to interna-

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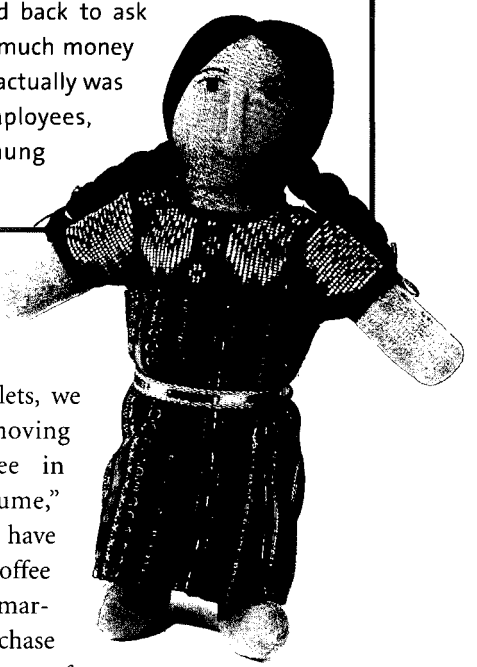
when I went to Guatemala, nobody from Maya Traditions would be available to see me.

In Panajachel, Maya Traditions' declared headquarters, I spent much of two days looking for signs of Jane Mintz. I saw Maya dolls selling for about $3. (Maya Traditions advertises similar-looking Maya dolls on the Internet for $42.) I saw scarves selling for $2 to $10. (Maya Traditions advertises scarves for $36.) I saw a Guatemalan backpack selling for $12. (Maya Traditions sells Guatemalan backpacks for $25.) But I didn't find anyone who had heard of Jane Mintz. Maybe Maya Traditions is a wholesaler, someone suggested.

It turns out that Maya Traditions is listed as a wholesaler member of the Fair Trade Federation, based in Washington. The federation describes itself as "an association of fair-trade wholesalers, retailers and producers whose members are committed to providing fair wages and good employment opportunities to economically disadvantaged artisans and farmers worldwide."

When I called the federation's Chris O'Brien to ask what exactly is the "fair wage" that Maya Traditions pays its employees, it seemed that he didn't have a clue. "Currently there is no seal of accreditation for Maya crafts," O'Brien said. "Maya Traditions has applied to be a member, and we have approved that." Check out our Web site and call back if you have further questions, he said. A look at the Web site revealed some frequently asked questions, including "What is a fair wage?" The answer: "Producers receive a fair wage when they are paid fairly for their products."

When I called back to ask once more how much money Maya Traditions actually was paying its employees, Chris O'Brien hung up.



tional markets. They operate an extortion scheme with socially redeeming significance, exacting $1.26 per pound for coffee that is currently worth less than 50 cents in the competitive market.

This subsidy is paid by consumers in American coffeehouses, not by governments. But like all farm subsidies that affect the unit price received by growers, the fair-trade minimum encourages more production, depressing the price of coffee that is sold into the free market.

In addition, fair-trade coffee is marketed mainly with political protests, not with appeals to consumer taste. While it can be sound economics to market food as a cause – think of Girl Scout cookies – the use of political pressure as a marketing tool is problematic. "Even though we have a distribution channel in the U.S. that has by my count some 4,000 outlets, we still are not moving fair-trade coffee in sufficient volume," says Lingle. "We have never seen a coffee that could be marketed under purchase of penance because of the conditions of the industry. We ask consumers to buy the product because of pleasure, not because I feel guilty about where the product is from."

Yet the beat goes on. The activists at Global Exchange – the main fair-trade coffee pressure group – boast that Starbucks agreed to

JOHN GOODMAN

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carry the fair-trade label because of political protests in some 30 cities nationwide. These days, Global Exchange is busy demonizing Procter & Gamble and its Folger's brand. "Kick the Can!!" shouted a December 2001 flier announcing a "Nationwide Day of Action Against Folgers." Global Exchange asserts that Proctor & Gamble is behind "problems such as malnutrition in Nicaragua, rural unrest in Mexico, and increased drug cultivation in Colombia."

RADICAL POLITICS

One has to wonder, too, whether even the consumers willing to pick their coffee brand on the basis of social virtue understand who is deciding where virtue lies. Global Exchange expresses "solidarity" with Fidel Castro's revolution, and is in the business of taking lefties on "reality tours" to Cuba. One of those tours features Che Guevara's "historical haunts," where the tourists can meet Communist functionaries and other friends of the revolution. Call up the Global Exchange Web site, and you will find nice things being said about Fidel's brand of economics. You won't find criticism of Cuba's human rights record.

But call up the United States section on GlobalExchange.org, and a distorted American flag pops up: the red and white stripes are still there, but the stars have been replaced by corporate logos, including those of IBM, Apple, Playboy and Nike.

Global Exchange, we find, believes that the World Trade Organization "only serves the interests of multinational corporations" and that "the WTO is killing people." It doesn't like Israel much, either. The nation is portrayed as "an exclusionary state" that "is illegally occupying Palestine."

After the attacks on New York and the Pentagon, Global Exchange's Web site immediately went into antiwar mode, seeing "no evidence" that Osama bin Laden was actually responsible for the attacks. The United States bombing of Afghanistan, in Global Exchange's view, was mainly to "boost President Bush's already-sky-high public opinion ratings" and "ensure a continued military presence in the Middle East," the Web posting said.

"The twin pillars of United States power in the world – money and weapons – have spawned many enemies," Global Exchange's co-founder, Kevin Danaher, wrote in a Sept. 29 op-ed article in *The Washington Post.* Danaher went on to explain that the United States should not be "relying on the money values and weapons that got us into this trouble" by going to war against the Al Qaeda network and the Taliban.

The *Post* identified Global Exchange as "an international human rights organization." Danaher's own idea of human rights was on display in Seattle during the 1999 WTO trade ministerial summit. After protestors trashed the city, Danaher blamed the police. I saw him in Washington in April 2000, at the World Bank and International Monetary Fund protests. Again, Danaher blamed the police for the violence. He was also in Genoa, Italy in July 2001, when protesters rioted at the G-8 countries' economic summit. When police shot and killed one of the rioters, Danaher released a statement saying that "democracy has reached a new low."

Danaher helped launch Paul Rice's Transfair as a board member. He has since left, apparently in an effort to distance Global Exchange's rowdy style from the sedate style of the boardroom. These days, Rice likes to be portrayed in the press as an entrepreneur. But what's really going on is that Global Exchange and Transfair are playing the classic bad cop, good cop to pressure their capitalist adversa-

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ries to sign on to fair-trade coffee, with plans for bananas, sugar and rice in the works. Collecting 10 cents a pound by certifying the fair-trade label for corporations can pay off.

Rice saw no problem with the activists' claim that the consumer choice is between fair-trade coffee and sweatshop coffee. And he reacted strongly to the suggestion that the large plantation I visited treats its workers decently. "I think it is naïve, a certain impossibility that anyone in Guatemala is paying above minimum wage," he opined.

Rice likens fair-trade coffee's future to the growth of the organic food industry in recent decades, and envisions retail outlets like Fresh Fields devoted to fair-trade products. I asked if he thought it was a mistake for fair-trade advocates to focus on the capitalist establishment instead of working to create consumer demand the old-fashioned way. "We don't consider ourselves an activist organization," Rice declared. "If you are trying to ask if we are wild-eyed activists, the answer is 'no' and I resent the question."

Global Exchange is "an industry butt kicker," Rice insisted. "We don't share agreement with tactics or strategy or any group that does negative campaigning." But Transfair does have a direct (10 cents a pound) interest when Global Exchange manages to intimidate another corporation to sign up for fair-trade coffee.

The real story, in the view of activists like Rice, is that if you're not part of their solution you're part of the problem. In the meantime, if you're looking for a killer cup of cappuccino, it still pays to look beyond the fair-trade label. M

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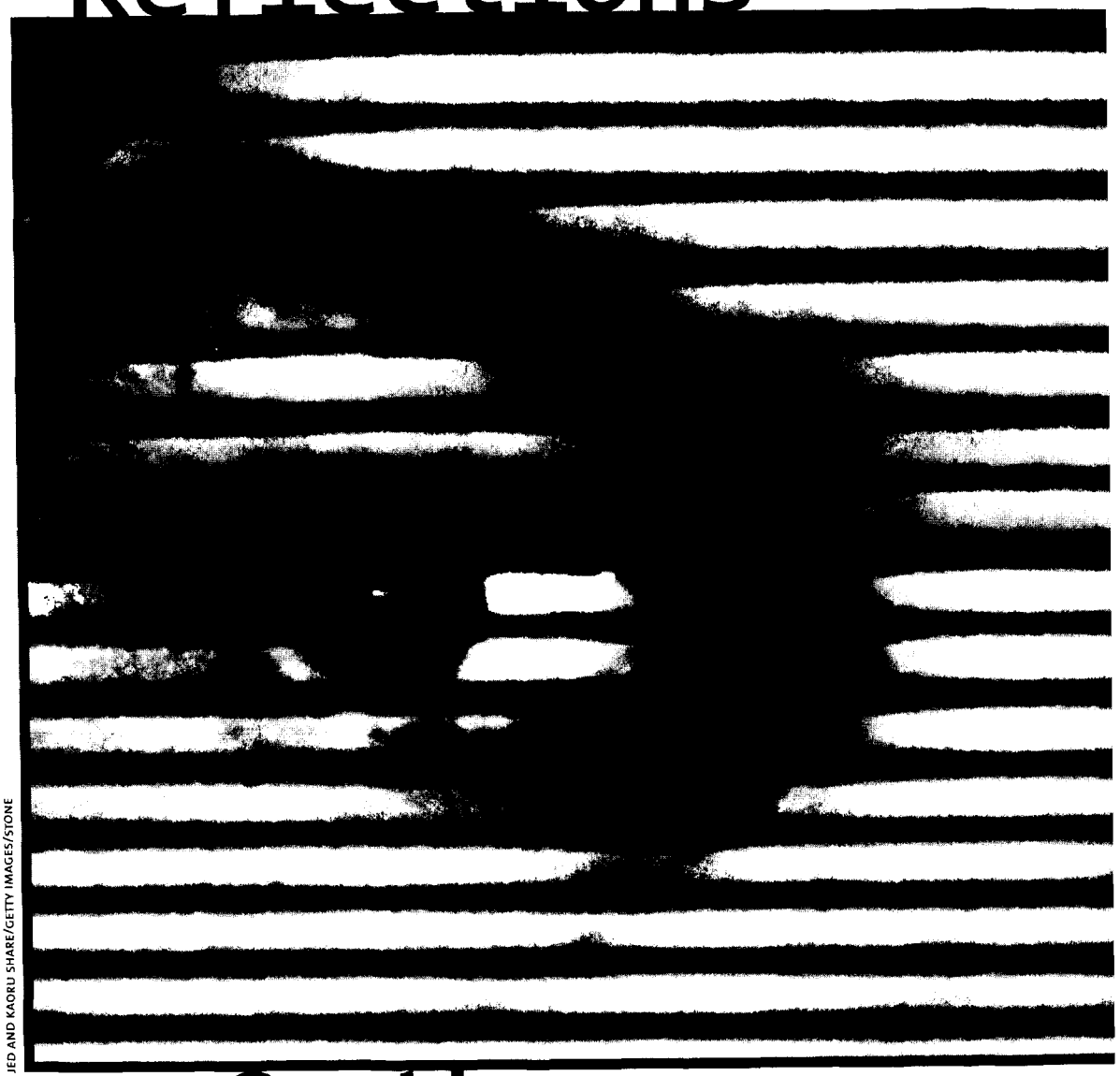
Reflections



JED AND KAORU SHARE/GETTY IMAGES/STONE

On the Deflation Threat

By Barry Bosworth

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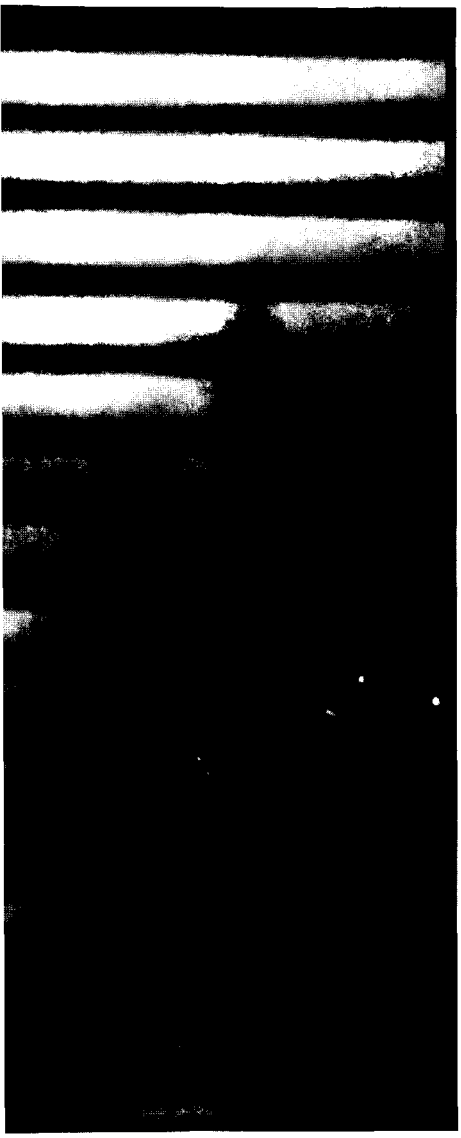

Economics is not called the dismal science for nothing, and economists love to sound the alarm. Just as we were prepared to celebrate victory in a long war against inflation, we are being told that a new threat is imminent: deflation. Ominous comparisons are made to Japan, where an intractable economic stagnation is seen as the product of deflation. And we are reminded of wretched times, like the depression of the 1930s, which were marked by rapid declines in price level. How seriously should we take the threat?

It is important to distinguish the source of falling prices. Deflations induced by sharp contractions in aggregate demand have invariably had high costs, and monetary policy has often proved ineffective in bringing them to an end. However, episodes of gradual price declines that result from sustained growth in productivity and supply – the agricultural boom in the American Midwest in the late 19th century comes to mind – have been relatively benign.

Thus, the concern ought to be with recession, not with deflation per se. Note, too, there is an asymmetry in the costs of deflation versus inflation – one that offers good reasons for setting the goal for price stability in a way that allows for some inflation. Finally, if people really want to fret about deflation, they should focus on falling asset prices – real estate, stocks and the like – not falling prices for goods and services.

THE COSTS OF DEFLATION

The economics of deflation parallel those of inflation. Inflation is a sustained rise in the average price level, and deflation is a sustained fall. Thus, if high inflation is

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bad and less inflation is good, it is somewhat surprising to be told that deflation is not even better. In part, the explanation is that in cases of both inflation and deflation the costs arise from the surprise factor. It is *unanticipated* changes in prices, regardless of whether the changes result in inflation or deflation, that distort the allocation of resources and result in arbitrary redistributions of income and wealth. Just as an unexpected inflation leads to gains for borrowers (who pay their debts in depreciated currency) and parallel losses to creditors, the reverse is true for episodes of unexpected deflation.

Those writing about economics and business tend to associate borrowing with virtuous entrepreneurial activity, which explains why economists are inclined to be tolerant of modest inflation. Deflation, their reasoning goes, imposes the greater cost because it punishes innovators (who are borrowers) and holds back progress. Economists also believe that it is a lot harder to drive down wages than to raise them. Hence, low but positive inflation tends to make it easier for the economy to adjust to shocks that reduce labor productivity and require a reduction in real wages to regain full employment.

The likely impact of deflation on financial markets adds to this pro-inflation bias. The effects of inflation, if it is anticipated, will be largely offset by an adjustment to interest rates. Both borrowers and lenders should be focused on the real rate of interest (that is, the nominal rate of interest less the rate of inflation), and expectations of higher inflation will lead to higher nominal rates.

Note that a combination of high inflation and high interest rates can still yield a moderate real rate. By contrast, the nominal rate of interest cannot be negative – nobody will lend money at, say, a rate of minus 5 percent. Hence, the argument that what really counts is to avoid surprises does not quite hold for deflation; once the nominal rate of interest gets down to zero, deflation generates high real interest rates that depress investment and contribute to unemployment. Thus, in a world of low interest rates and deflation, monetary policy may well lose its capacity to stimulate output. In fact, under extreme conditions, a vicious cycle could develop: as a more rapid rate of deflation raises the real interest rate, investment falls and the rate of price reduction accelerates – in turn raising the real interest rate even more.

There's an important distinction to be made here. In itself, gradual deflation is not particularly costly. In the United States, the general price level drifted down by about 1 percent annually for more than 30 years after the Civil War. Yet, that period is generally viewed as a golden age of economic growth, with strong gains in income. In Britain, the price level drifted down throughout the 19th century – a century during which per capita income more than tripled. Similarly, consumer prices have been declining in China since the end of 1997 despite ongoing income growth in excess of 7 percent.

Yet, deflation has also been associated with severe economic crises. In the depression of the 1930s, output and the price level both fell by 25 percent in less than four years. And if we expand the definition of deflation to include declining asset prices, deflations are frequently linked to financial crises.

The historical record thus suggests that the costs of deflations are related to their causes. In this respect, it is particularly important to distinguish between demand- and supply-side shocks. Deflations that result from

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reductions in demand (and, subsequently, to declines in output, job losses and wasted capacity) are bad news, indeed. But the defining characteristic is the drop in aggregate demand; deflation is a byproduct.

Still, deflation in a depressed economy accentuates the decline in economic activity by punishing borrowers and threatening the solvency of banks; this in turn restricts their lending. In an effort to reverse punishing declines in the demand for goods and services, governments have occasionally driven interest rates to zero and found monetary policy to be, at best, an incomplete solution. That was arguably the case with the depression of the 1930s, and it appears to be an important source of woe for Japan today.

By contrast, sustained declines in the price level that are the result of supply shocks have been associated with gains in real incomes. Examples include technological innovations, such as improvements in computer hardware and software that drive down the cost of information processing, and declining prices for oil and gas in countries that consume more energy than they produce. Note that such price declines translate into increased real output and do not lead to downward pressure on wages. They are also typically associated with increased investment opportunities and robust demand for credit.

In today's economy, the deflation of asset prices – stocks and real estate – is a much more real threat than a decline in the overall price level.

ASSET PRICE DEFLATION

In today's economy, the deflation of asset prices – stocks and real estate – is a much more real threat than a decline in the overall price level. The bursting of the equity and real estate bubbles in Japan in the early 1990s severely damaged the country's financial system and led to much of the economy's current difficulties. Similarly, the collapse of the real-estate market in the Scandinavian economies at about the same time precipitated a harsh recession. Asset price deflation also worsened the severity of the Asian financial crisis of 1987-88.

A sharp decline of asset prices causes distress because the assets are frequently pledged as collateral for debts. Heavily leveraged debt, where a thin layer of net worth protects lenders, increases the risk that small changes in asset prices will trigger widespread bankruptcies. The need to sell assets in illiquid declining markets can fuel further asset losses.

America's experience with such problems in the 1930s led to many of the financial reforms that protect financial institutions against the effects of crises in asset markets. In particular, the United States relies on broad capital markets rather than banks to allocate credit. It is far less traumatic for, say, diversified mutual funds to lose value than for a bank that is part of the payments system to take a big hit from bad debts.

However, vulnerabilities remain high in other countries where investment is largely financed through bank lending and the legal procedures for restructuring impaired balance sheets are ineffective. The Asian economies that were hit by the 1987 collapse

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of asset values are still struggling to deal with two distinct aspects of the crisis: the need to reconstruct a banking system burdened with large amounts of nonperforming loans, and the problems of resolving the large numbers of bankrupt nonfinancial enterprises.

THE GOAL OF ZERO INFLATION

Deflation plays an important role in the debate over whether central bankers should make zero inflation the goal of monetary policy. The failure of conventional accounting and tax systems to distinguish fully between real changes in income and wealth, and paper changes that are byproducts of changes in the price level, suggest that the notion of a fully anticipated, costless inflation is an illusion. For example, the federal tax code adjusts income tax brackets for inflation, but makes no distinction between real income from capital and returns that are linked to inflation. Thus, both inflation and deflation lead to economic distortions, and those distortions rise with the rate of inflation or deflation.

By no coincidence, most contemporary economists view price stability as a high priority. But what they mean by stable prices can be a bit fuzzy. Only a few argue in favor of a rigid target in which any unexpected rise in prices must be offset later by a period of deflation. More commonly, the goal of price stability translates into a target for the rate of inflation – and that target may not be zero price increases because it is widely believed that the official price indexes systematically exaggerate increases in the cost of living.

In addition, the current experience in Japan has given pause to inflation hawks. At zero inflation, it is not possible to engineer a negative real rate of interest. Yet, negative real rates on business loans may be required to stimulate investment sufficiently to lift an economy out of a recession. In a no-inflation environment, we can expect interest rates of only 2-3 percent on low-risk government securities. That leaves very little room for monetary policy to respond to a recession threat with cheaper credit.

In this current recession, for example, the Federal Reserve has reduced interest rates by more than 4 percentage points in an effort to stabilize the economy in the face of a relatively modest decline in demand. Such a strong response was possible because the process began when the nominal interest rate was at 6 percent and inflation was about 3 percent. Similarly, during the 1990 recession the Fed reduced interest rates by about 4 percentage points – driving the real rate into negative territory – in its efforts to engineer a recovery.

With prices falling about 1 percent per year, the impossibility of pushing Japan's nominal interest rate below zero has left the central bank without the ability to provide stimulus. While critics argue that Japan should have done things differently in the early 1990s to avoid the current mess, the limited policy options today illustrate the risks in maintaining zero inflation in good times. Indeed, with the exception of the early 1980s, recoveries from past recessions in the United States have been associated with at least brief periods of negative real interest rates.

THE POLICY RESPONSE

The war against inflation does seem to have been won; most countries now operate with rates of inflation far below those of the 1970s and early 1980s. And as more economies have flirted with deflation, commentators have begun to focus on the policy trap created by the combination of deflation and zero nominal interest rates. As suggested above, there is considerable agreement on how to avoid the trap: aim for a low, but positive, rate of

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inflation (say 2 percent per year). There is less guidance as to what to do to escape the trap once it has snapped shut.

Paul Krugman and a few other economists have proposed that the Bank of Japan formally set a target of greater-than-zero inflation. A credible commitment to a positive inflation rate, the thinking goes, would induce the private sector to alter its expectations accordingly and permit real interest rates to fall below zero. The trouble is, lenders and borrowers are unlikely to view a government announcement of intent to generate modest inflation as credible – particularly after a long period of policy failures.

Alternatively, the Bank of Japan could change prices by selling yen for other currencies. The result would be depreciation and a stimulus to demand through a growing trade surplus. In addition, the depreciation would raise the price of imports and thereby change inflation expectations.

Japan's trade partners would probably be inclined to oppose such a policy because it would make their exports less competitive in the big Japanese market. However, the strength of their reaction would depend on the circumstances. If Japan is seen as being uniquely threatened by deflation and chronic recession, Japan's trade partners might well tolerate policies that initiate a process of reflation in an economy so important to the health of the global economy – even if it was against the short-term interests of their own exporters

Remember that governments do have the ability to inflate an economy even if the nominal interest rate is zero. The central bank can issue as much money as it chooses, and it can use those funds to create demand for goods and services. Think of a case in which a central bank simply drops money from airplanes.

However, no government would undertake such an action because the more rational step is to use the funds to meet social needs or to cut taxes. To put it another way, in the extreme case, fiscal and monetary policy begin to blend together. Problems like those of Japan are solvable, but the government must be willing to commit to strong action.

It has been argued that the growth of public debt in Japan is evidence that fiscal stimulus could no longer work. Those who make the argument, however, fail to distinguish between increases in the public debt that are the result of the bailouts of failed financial institutions and those that are discretionary fiscal actions.

The bailout of savings and loan associations in the United States, in which the government did not allow financial institutions to default on their obligations to depositors, increased government debt without increasing the demand for Chryslers or Caterpillars. Similarly, much of the increase in Japanese government debt has been associated with transfers of capital to the banking system rather than increases in consumers' purchasing power.

The lesson from modern-day Japan is the same as the lesson from the Great Depression: when the going gets really rough, monetary policy is not enough. While we may want central banks to take the lead in stabilization policy, the ability to use fiscal policy must be maintained as a second line of defense. As long as we do not negotiate away our freedom to act on the fiscal side, I wouldn't worry very much about price deflation.

I am, on the other hand, concerned that public officials, blinded by their own ideological agendas, would be incapable of acting in a timely fashion. Washington's response to the current recession reminds us of the difficulty of getting a divided Congress to commit to even the simplest policy actions. M

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America's Dangerous Economic Mythologies

By Charles J. Zwick,
Robert A. Levine and Peter A. Lewis

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Notwithstanding the downturn in the economy (which preceded the events of Sept. 11), the United States remains in the midst of an unprecedented era of prosperity. Gross Domestic Product has nearly tripled in 30 years, life expectancy has increased by seven years and pretty much anyone so inclined can go to college.

Meanwhile, the development of our physical, social and security structures has lagged far behind. Roads, bridges, and water and sewer systems need hundreds of billions of dollars worth of repairs; the social safety nets are frayed; and the education provided by public primary and secondary schools is inferior to that of other advanced nations. Moreover, the Sept. 11 tragedy and its aftermath have shown that both our national intelligence and our public health and security systems are inadequate.

Yet we somehow can't muster the resources to cope with these problems. Indeed, in recent years, even heretofore big-spending Democrats have contended that we cannot afford to do what is needed – that investing in the public sector would somehow set the economy back in the long run.

The attacks on New York and Washington quickly turned this consensus around by 180 degrees on the single issue of national-security spending. It is still unclear, though, whether this sort of political flexibility will be extended to other urgent national needs without some equivalent crisis.

The can't-afford-it conventional wisdom is based on myths that have replaced hard thinking about economic policy. Democratic and Republican politicians alike have used symbols to conceal hidden agendas, but in recent years the Republicans have been much better at the game. "Government should not" is traditional Republican ideology. But with help from Bill Clinton and the New Democrats, the Republicans have managed to morph "should not" into "cannot."

Before September, the political scene featured the ludicrous spectacle of Republicans espousing a twisted version of Keynesian economics (tax cuts stimulate the economy, spending increases do not) while Democrats retreated to the pre-Keynesian shibboleths of the 1920s (deficits are always bad). But the real Republican agenda, meekly accepted by official Democrats, was simply to deactivate large parts of the government.

Here, we deconstruct three economic mythologies – the burden of deficit spending and the national debt, the crisis of Social Security, and the inherent impotence of government as a problem-solver – that feed the view that, when it comes to government, less is always more. The inclination of politicians and their economic advisers to take this path of least resistance is leading America into an unstable and unbalanced future – one with a rich private sector and a threadbare public sector.

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Myth 1:
THE INHERENT VIRTUE OF A BALANCED BUDGET

JONATHAN CARLSON (ALL)

The federal government, like a family, must balance its spending and its income. Budget deficits are imprudent liens on the future that impede economic growth by driving out private investment. Indeed, so long as there is a national debt, the budget should produce a surplus.

History shows that federal deficits are not a drag on the national economy – far from it. The United States economy has grown at a phenomenal pace over the last half-century, which witnessed deficits in 44 out of 50 years. Why, then, does the balanced-budget mythology remain so strong?

For starters, there is the intuitive power of the analogy to family finances. But the analogy is false, because the federal government, unlike a family (or a state government) can finance itself by printing money or by borrowing from the Federal Reserve – a reality that makes the federal purse into the appropriate balance wheel for the economy. For that matter, the family analogy doesn't even hold for families; there's nothing so terrible about going into debt if the money is spent on a productive asset like a house or a college education.

To perform its stabilizing role, the federal government must be able to run deficits when increased demand is needed to keep the economy from slipping into recession. By the same token, these fiscal requirements are reversed when the economy is fully employed: federal surpluses are appropriate in order to avoid the general inefficiency created by inflation and the specific inefficiency linked to crowding out private investment.

The technical rationale for the balanced budget is embedded in classical economics. With competitive markets and flexible prices, the argument goes, demand adjusts to productive capacity; labor and other resources could therefore not be involuntarily unemployed. But Keynes found two weak points in classical theory. First, it takes time for wages and prices to adjust – time in which resources certainly can be unemployed for many years, as they were during the Great Depression. Second, expectations of falling prices can create chronic macroeconomic disequilibria, a reality that Japan is rediscovering today.

In the United States, Keynesian theory was

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(somewhat inadvertently) put into practice with the arms buildup preceding World War II. The immense deficit spending necessitated by World War II ended the Depression. And Keynesian thinking remained the tacit basis for policy for decades; by the late 1960s, even President Nixon was explaining, "we are all Keynesians now."

But in much the same way as the Great Depression had proved the incomplete nature of classical theory, the oil-crisis-induced stagflation of the 1970s highlighted the shortcomings of Keynesian-style fiscal strategy. Keynesianism focused on adjusting the demand for goods and services. It offered no insight – or policy response – to supply shocks that affected relative prices and changed expectations of inflation.

The newly revealed gaps in Keynesianism emboldened some opportunistic conservatives to reconstruct a fiscal policy around a crude version of classical theory. Supply-siders asserted that the incentive effects of deep cuts in tax rates would increase the supply of both labor and capital by so much that total tax revenues would actually increase. The Laffer Curve did not work as advertised (though it did fulfill the hidden agenda of redistributing a lot of income to those supplying a lot of capital and skilled labor). Instead, it led to budget deficits in the 1980s so immense that the Federal Reserve was forced to offset the fiscal stimulus with high interest rates.

When Democratic political leaders attacked the Reagan deficits, they were supported by mainstream Democratic economists who were worried about negative effects on private investment and price stability. That view outlived the immediate fiscal crisis, leading to an about-face in the 1990s in which Democrats led the fight for balanced budgets. It formed the ideological basis for the New Democrats and for President Clinton's expediency in discarding 60 years of Democratic ideals and half of his own election platform in order to co-opt the political middle.

Clinton's good fortune in presiding over a long economic expansion and a stock market boom that multiplied tax revenues in the 1990s beyond anyone's dreams seemed to ratify the shift. The Democrats became the party of the balanced budget and debt reduction. That led to Al Gore's absurd promise to balance the budget annually, forever and ever. And now both parties, and all right-thinking Americans, have been baptized into the mythology of the balanced budget.

The problematic fallout is twofold. First it has led to the perverse timing of running deficits when surpluses are needed, and vice versa. That became clear in the summer of 2001, even before the terrorist attacks, as President George W. Bush had the bad luck to be in the White House when the 1990s boom finally ended. Now, it should force us to relearn the lesson that government tax and spending policy should be countercyclical, becoming more expansionary in recessions in order to offset falling private demand.

Second, since the core rationale for government spending is to cover needs that private markets do not, we should not let the fear of deficits cloud our long-term strategies. Some public goals, like some family and business ones, are worth borrowing to finance.

Indeed, though it may be surprising to those who grew up in an era of righteous opposition to deficits, the historical evidence does not show that the burden of the national debt slows down the economy. If anything, the reverse is true. Except for a drop from 1985 to 1989, productivity increased fastest when the debt grew. In any case, although the data are too sparse to prove that increased

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debt increases productivity, they offer good reason to be skeptical of the converse.

The federal government should move fiscal policy back into the role of active contributor to economic balance, as it was from the 1940s through the 1970s. Washington should also be prepared to support public investments that increase the nation's growth potential.

Myth 2: SOCIAL SECURITY IS IN CRISIS

The Social Security system is going bankrupt! Unless major changes are made, individuals now covered by Social Security will either not receive what they were promised, or payroll taxes will rocket out of control. We must act now or the problem will only get worse, and we will end up mortgaging our children's future.

None of this is true. To understand why, the issue must be deconstructed. Start with the practical matter of whether the Social Security system is going bankrupt. The 2001 annual report of the Social Security Trustees makes three projections based on demography and economic growth. One concludes that the Social Security trust fund will be fully funded for another 75 years. The more pessimistic second and third projections give it 35 and 25 years, the latter of which has been defined as imminent bankruptcy.

Yet the pessimistic projections are not based on recent productivity and GDP growth. Given appropriate fiscal and monetary policies, we see no reason to assume that the future can't be at least as good as the past. The real issue, then, is how to deal with uncertainty and risk. And the answer is surely not to throw up our hands and assume the worst. Rather, to be safe, we should continue an adaptive-management approach suggested by the trustees – a policy that assumes "periodic change in these programs will continue to be necessary, as it has been since they were enacted."

Unfortunately, Democrats and Republicans alike accept the myth of imminent bankruptcy. Each party has a different agenda – for the Republicans, to shrink government, for the Democrats, to scare aging voters otherwise inclined to identify with conservatives. One peculiarly Republican addendum, however, is that Social Security can be saved by partial conversion to a system of personal private investment. That is inherently contradictory: the slow-growth economic premises leading to the crisis forecast would make pri-

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vate investment the riskiest possible option, and would make it far more difficult to fund the transition.

Note, in any case, that the trust fund isn't now and never has been the public equivalent of an actuarially sound private pension fund with contractually fixed liabilities. Rather, it is a politically defined social support system that backs its extraordinary promises to bear the economic risks of retirees through its ability to tax. Social Security has also always carried a nonactuarial element of redistribution – a basic minimum retirement income for all retirees no matter how small their contributions, as well as protection for widows, children and the disabled.

The trust fund was created as an accounting device, for two related reasons. First, it emphasized that the pensions were a guarantee – in modern budget jargon, an entitlement – not subject to the annual appropriation process. Second, it symbolized the nature of that guarantee by connecting the payroll to the pension benefits. This second point has been stressed by many Social Security advocates as legitimizing the system, as compared to a means-based welfare system. As valid as these political devices were (and are), they clearly confuse the debate over reform.

The real question here is not whether the trust fund accumulates enough paper to write big pension checks, but whether the economy will generate sufficient wealth to make good on Congress's future promises without undue strain on active workers. We are told that the country cannot afford current Social Security benefits in the future because there will soon be too many retirees per worker to support. For example, the trustees' point out that in 40 years there will be only 2.1 workers for each retiree, as compared to 3.3 workers today.

What they do not explain is that this represents an increase in liabilities per worker of only 1.15 percent a year – far less than historical annual increases in labor productivity. Even worse, when the actuaries project productivity, they estimate the rate of growth at only 1.5 percent a year, significantly less than the average of 1.8 percent achieved over the past 40 years. Indeed, the 1.8 percent rate is arguably pessimistic; from 1995 to 2000, productivity grew by an annual average of 2.2 percent. If faster growth rates had been projected, the Social Security crisis would have been reduced to minor proportions – or eliminated entirely.

Myth 3: WASHINGTON IS THE PROBLEM

Big government does more harm than good, undermining the efficiency of markets and denying the successful their just deserts.

The appropriate role of the federal government has been a central issue of political economy in the United States since the days of Jefferson and Hamilton. Where people stand on this matter depends largely on the fundamental values and beliefs they were taught.

From the New Deal at least though Lyndon Johnson's Great Society, Democrats were inclined to favor a larger role, Republicans a smaller one. In recent years, however, many Democrats have retreated from a defense of activist government, not so much because of a change in values as for political expediency.

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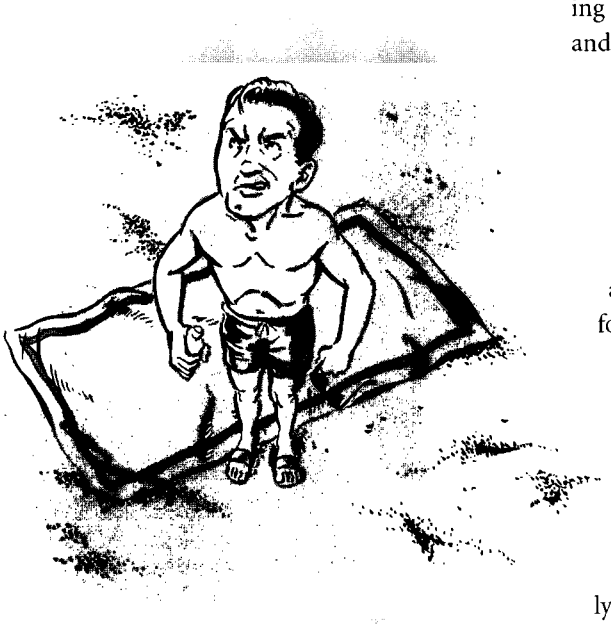

Almost all Western economists agree that decentralized free markets generally allocate productive resources among competing private needs more efficiently than does any central mechanism. Indeed, markets are generally more efficient than the bureaucratic alternatives, even when they are not so free. But not all markets work very well. And intervention need not be as meddlesome as, say, that of the Soviet Ministry of Perfume and Paper Clips.

One has only to look at the enormous contribution the Federal Deposit Insurance Corporation has made to the banking system; the groundbreaking innovation of the Federal Housing Administration and the Federal National Mortgage Association, which created the largest homeowner class in the world; the impact of the Tennessee Valley Authority on rural America; the benefit of the Interstate System of highways; the importance of the National Institutes of Health, to name only a few. These institutions filled needs where markets didn't. Now we have new needs calling for new public innovations, institutions and investments.

> By the same token, there is no reason to believe that the distribution of rewards produced by a totally free market is more equitable than distribution moderated by democratic processes. Since Adam Smith, most economists have agreed that markets distribute the rewards for production in accord with contributions to that production. Not Smith himself, but some of his successors unto the current day, conflated this result with equity. But economics offers no rationale for such a judgment.

A particular twist on this conflation of "free" with "fair" – one heard frequently from President George W. Bush as well as other Republican politicians – is "You earned it. What right do they have to take it away?"

The catch, of course, is "they" are us. "They" is the government we've elected to do things that we cannot do ourselves – things that have increased the ability of the skilled or powerful to earn all that money. "They" includes the armed forces and the police officers and firefighters who defend us. "They" build the roads and other infrastructure; "they" educate our children and keep the air and water clean.

"They" also provide the safety net that some conservatives say we should do without. But, for better or worse, this most controversial role of government looms much larger in political controversy than it does in fiscal fact. Right now, just 14 percent of the federal budget (about 2.5 percent of GDP) goes to subsidies for the poor, including Medicaid. The proper role of government in these tasks is a matter of judgment. But the debate should be based on facts, not myths – and certainly not the myth that we can't afford it. M

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The Mystery of Capital

BY HERNANDO DE SOTO

Hernando de Soto is, in the view of many, the most influential development economist alive today – and, in my view, deservedly so. De Soto, the Peruvian economist who heads the Institute for Liberty and Democracy in Lima, has long been a darling of the libertarian right for his deeply skeptical view of the role of government, not to mention the Great Satan to the Maoist Shining Path guerillas, who bombed his institute at the height of their efforts to turn Peru into a Socialist paradise. ¶ But since the fall of the Soviet Union, de Soto's argument that legal institutions that ensure property rights and free markets hold the key to economic growth in poor countries has been embraced by the mainstream. Top-down development planning is dead, thanks in no small part to de Soto. ¶ *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else** is one of those "eureka" books – a work whose central thesis seems obvious when you read it, yet is both original and powerful. If you've never been exposed to de Soto's worldview, you're in for an eye-opener. Indeed, his capsule history of the evolution of capitalism in Europe alone is worth the price of admission.

DAVID H. WELLS/TIMEPIX

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Imagine a country where nobody can identify who owns what, addresses cannot be easily verified, people cannot be made to pay their debts, resources cannot conveniently be turned into money, ownership cannot be divided into shares, descriptions of assets are not standardized and cannot be easily compared, and the rules that govern property vary from neighborhood to neighborhood or even from street to street. You have just put yourself into the life of a developing country or a former communist nation.

More precisely, you have imagined life for 80 percent of its population, which is marked off as sharply from its westernized elite as black and white South Africans were once separated by apartheid. This 80 percent majority is not, as Westerners often imagine, desperately impoverished. In spite of their obvious poverty, even those who live under the most grossly unequal regimes possess far more than anybody has ever understood. What they possess, however, is not represented in such a way as to produce additional value.

When you step out the door of the Nile Hilton, what you are leaving behind is not the high-technology world of fax machines and icemakers, television and antibiotics. The people of Cairo have access to all those things. What you are really leaving behind is the world of legally enforceable transactions on property rights. Mortgages to generate additional wealth are unavailable even to those people in Cairo who would probably strike you as quite rich. Outside Cairo, some of the poorest of the poor live in a district of old tombs called the City of the Dead. But almost all of Cairo is a city of the dead – of dead capital, of assets that cannot be used to their fullest. The institutions that give life to capital – that allow one to secure the interests of third parties with work and assets – do not exist here.

To understand how this is possible, one must look to the the United States in the 19th century when it was carving a society out of its own wilderness. The United States had inherited from Britain not only a fantastically complex land law but also a system of overlapping land grants. The same acre might belong to one man who had received it as part of a vast land grant from the British Crown, to another who claimed to have bought it from an Indian tribe, and to a third who had accepted it in place of salary from a state legislature – and none of the three might ever have laid eyes on it.

Meanwhile, the country was filling up with immigrants who settled boundaries, plowed fields, built homes, transferred land and established credit long before governments conferred on them any right to engage in these acts. Those were the days of the pioneers and the Wild West. One of the reasons it was so wild was that those pioneers, most of them nothing but squatters, insisted that their labor, not formal paper titles or arbitrary

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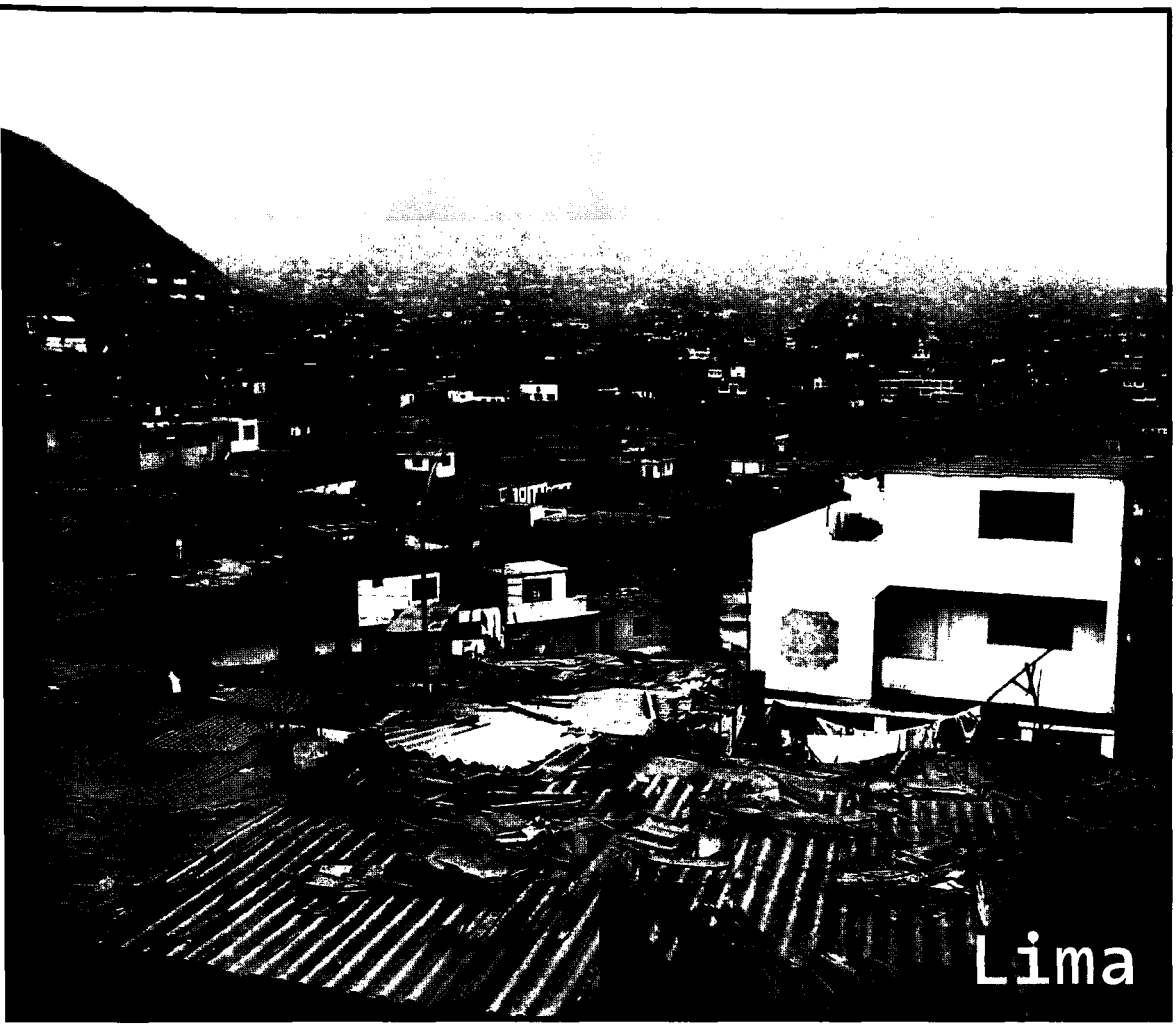

boundary lines, gave land its value and established ownership. They believed that if they occupied the land and improved it with houses and farms, it was theirs.

State and federal governments believed otherwise. Officials sent in troops to burn farms and destroy buildings. The settlers fought back. When the soldiers left, the settlers rebuilt and returned to scratching out a living. That past is the Third World's present.

A SURPRISE REVOLUTION

Before 1950, most Third World countries were agricultural societies organized in ways that would have made an 18th century European feel right at home. Most people worked on the land, which was owned by a very few big landlords – some of them indigenous oligarchs, others colonial planters. Cities were small and functioned as markets and ports rather than as industrial centers. They were dominated by tiny mercantile elites who protected their interests with thick wrappings of rules and regulations.

After 1950, there began in the Third World an economic revolution similar to the social and economic disruptions that occurred in Europe around 1800. New machines were reducing the demand for rural labor just as new medicines and public health methods

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were cutting the rate of infant mortality and extending life spans. Soon, hundreds of thousands of people were trundling down the newly built highways to the cities so alluringly described in the new radio programs.

The population of the cities began to rise rapidly. In China alone, more than 100 million people have moved from the countryside to the cities since 1979. Between 1950 and 1998, the population of metropolitan Port-

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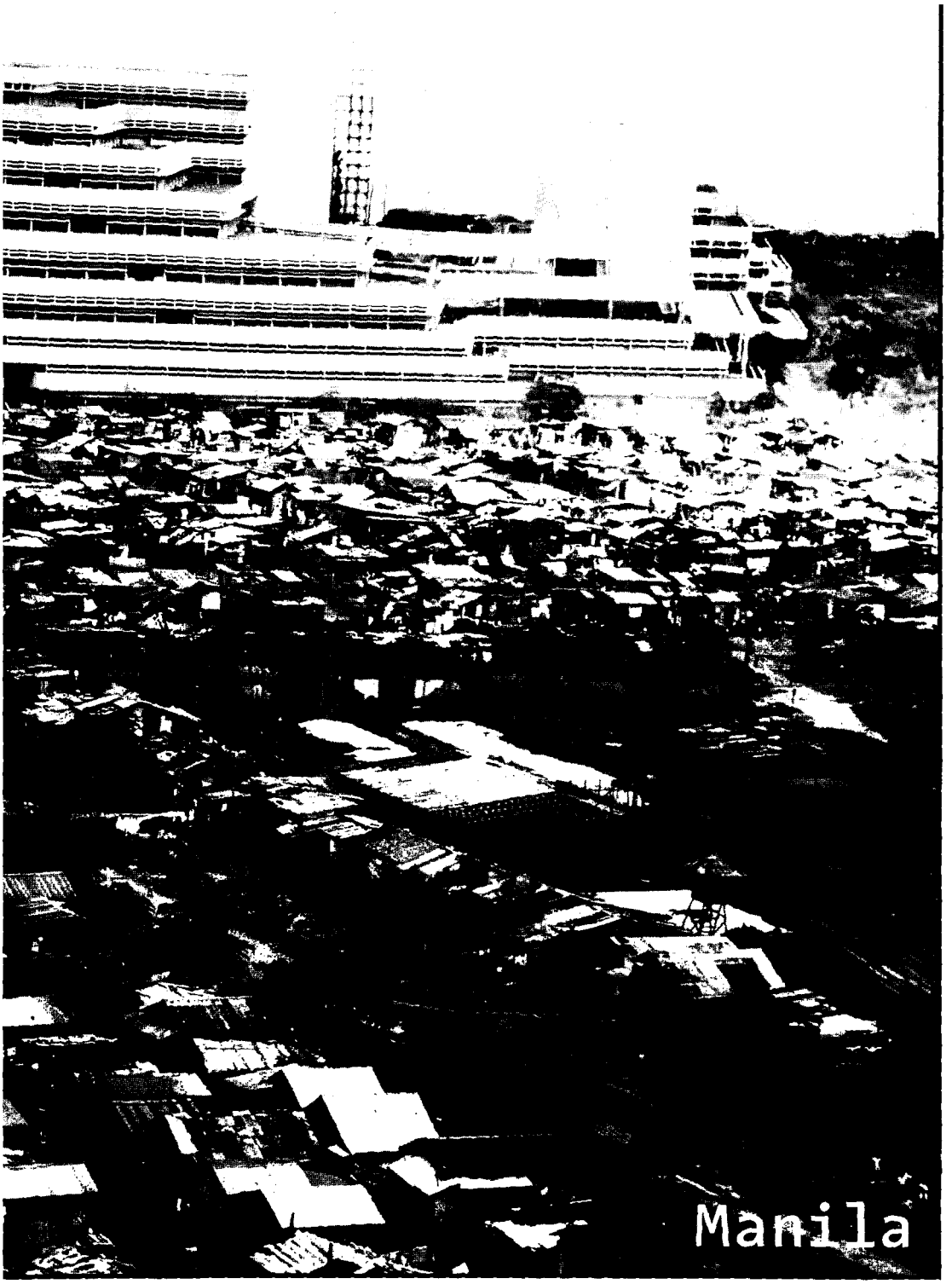

au-Prince in Haiti rose from 140,000 to 1.5 million. By 1998, it was approaching 2 million. Almost two-thirds of these people live in shantytowns. Experts were in despair over this surge of new city dwellers as early as 1973, long before the largest influx had taken place. "Everything happens as if the city were falling apart," wrote the architect Albert Mangonese. "Uncontrolled construction, anywhere, anyhow. The sewage system is inca-

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pable of helping drain rainwater, and stuffs up every day. The population concentrates in defined areas where no sanitation infrastructure is provided... The sidewalks of the Avenue Dessalines are literally occupied by small vendors... This town has become unlivable."

Few had anticipated this enormous transformation in the way people lived and worked. The fashionable theories of the day about development sought to bring modernity to the countryside. Peasants were not supposed to come to the cities looking for the 20th century. But tens of millions came anyway, despite a backlash of hostility. They faced an impenetrable wall of rules that barred them from legally established social and economic activities. It was tremendously difficult for these new city people to acquire legal housing, enter formal business, or find legal jobs.

To obtain legal authorization to build a house on state-owned land took six years and 11 months, requiring 207 administrative steps in 52 government offices.

THE OBSTACLES TO LEGALITY

To get an idea of just how difficult the migrant's life was, my research team and I opened a small garment workshop on the outskirts of Lima. Our goal was to create a new and perfectly legal business. The team then began filling out the forms, standing in the lines, and making the bus trips into central Lima to get all the certifications required to operate a small business in Peru according to the letter of the law. They spent six hours a day at it and finally registered the business – 289 days later. Although the garment workshop was geared to operating with only one worker, the cost of legal registration was equivalent to $1,231 – 31 times the monthly minimum wage. To obtain legal authorization to build a house on state-owned land took six years and 11 months, requiring 207 administrative steps in 52 government offices. To obtain a legal title for that piece of land took 728 steps. We also found that a private bus, jitney or taxi driver who wanted to obtain official recognition of a route faced 26 months of red tape.

My research team has repeated similar experiments in other countries with the help of local associates. The obstacles were no less formidable than in Peru; often they were even more daunting. In the Philippines, a person who has built a dwelling in a settlement on either state-owned or privately owned urban land, would, to acquire it legally, have to form an association with the neighbors in order to qualify for a state housing-finance program. The entire process could necessitate 168 steps, involving 53 public and private agencies and taking 13 to 25 years. And that assumes the state housing-finance program has sufficient funds. If the dwelling happens to be in an area still considered agricultural, the settler would have to clear additional hurdles for converting that land to urban use – 45 additional bureaucratic procedures before 13 entities, adding another two years to the quest.

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In Egypt, the person who wants to acquire and legally register a lot on state-owned desert land must wend through at least 77 bureaucratic procedures at 31 public and private agencies. This can take anywhere from five to 14 years. To build a legal dwelling on former agricultural land would require six to 11 years of bureaucratic wrangling, maybe longer. This explains why some 47 million Egyptians have chosen to build their dwellings illegally. If, after building homes, settlers decide they would now like to be law-abiding citizens and purchase the rights to the dwellings, they risk having them demolished, paying a steep fine, and serving up to 10 years in prison.

In Haiti, one way an ordinary citizen can settle legally on government land is first to lease it from the government for five years and then buy it. Working with associates in Haiti, our researchers found that to obtain such a lease took 65 bureaucratic steps – requiring, on average, a little more than two years – all for the privilege of merely leasing the land for five years. To buy the land required another 111 bureaucratic hurdles – and 12 more years. Total time to gain land lawfully in Haiti: 19 years.

In every country we investigated, we found that it is very nearly as difficult to stay legal as it is to become legal. Migrants do not so much break the law as the law breaks them – and they opt out of the system. Thirty years ago, more than two-thirds of the new housing erected in Brazil was intended for rent. Today, only about 3 percent of new construction is officially listed as rental housing.

To where did that market vanish? To the extralegal areas of Brazilian cities called *favelas*, which operate outside the highly regulated formal economy and function according to supply and demand. There are no rent controls in the *favelas*; rents are paid in United States dollars, and renters who do not pay are rapidly evicted.

Once these newcomers to the city quit the system, their only alternative is to live and work outside the law, using informally binding arrangements to protect and mobilize their assets. In 1976, two-thirds of those who worked in Venezuela were employed in legally established enterprises; today the proportion is less than half. These arrangements result from a combination of rules selectively borrowed from the official legal system, ad hoc improvisations, and customs brought from their places of origin or locally devised. They are held together by a social contract that is upheld by a community as a whole and enforced by authorities the community has selected. These extralegal social contracts have created a vibrant but undercapitalized sector, the center of the world of the poor.

THE UNDERCAPITALIZED SECTOR

Although the migrants are refugees from the law, they have hardly retreated into idleness. Undercapitalized sectors throughout the Third World and in former communist countries buzz with hard work and ingenuity. Street-side cottage industries have sprung up everywhere, manufacturing everything from clothing and footwear to imitation Cartier watches and Vuitton bags. There are workshops that build and rebuild machinery, cars, even buses. The new urban poor have created entire industries and neighborhoods that have to operate on clandestine connections to electricity and water. There are even dentists who fill cavities without a license.

This is not just a story of the poor serving the poor. These new entrepreneurs are filling the gaps in the legal economy as well. Unauthorized buses, jitneys and taxis account for most of the public transportation in many developing countries. In other parts of the

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Third World, vendors from the shantytowns supply most of the food available in the market, whether from carts on the street or from stalls in buildings they construct.

In 1993, the Mexican Chamber of Commerce estimated the number of street vendors' stands in the Federal District of Mexico City at 150,000, with an additional 293,000 in 43 other Mexican centers. These tiny booths average less than five feet wide. Still, if the Mexico City vendors lined up their stands on a single street with no gaps at intersections, they would form a continuous row more than 130 miles long. Thousands upon thousands of people work in the extralegal sector – on the streets, from their homes, and in the city's unregistered shops, offices and factories. An attempt in 1994 by the Mexican National Statistics Institute to measure the number of informal microbusinesses in the entire country came up with a total of 2.65 million.

PAPILIO/CORBIS

These are all real-life examples of economic life in the undercapitalized sector of society. In the former communist nations, you may see even more sophisticated activities off the books, from the production of computer hardware and software to the manufacture of jet fighters for sale abroad.

Russia, of course, has quite a different history from Third World countries like Haiti and the Philippines. Nevertheless, since the fall of communism the former Soviet states have been slipping into the same patterns of informal ownership. In 1995, *Business Week* reported that four years after the collapse of communism, only "280,000 farmers out of 10 million own their land" in Russia. Estimates based on electricity consumption indicate that between 1989 and 1994, unofficial activity in former Soviet states increased from 12 percent to 37 percent of total production. Some put the proportion even higher.

None of this will come as news to those who live outside the West. You need only open a window or take a taxi from the airport to your hotel to see city perimeters crowded with homes, armies of vendors hawking wares in the streets, glimpses of hustling workshops behind garage doors, and battered buses crisscrossing the grimy streets. Extralegality is often perceived as a marginal issue similar to black markets in advanced nations, or poverty, or unemployment. The extralegal world is typically viewed as a place where gangsters roam – sinister characters of interest only to the police, anthropologists and missionaries.

In fact, it is legality that is marginal; extralegality has become the norm. The poor have already taken control of vast quantities of real estate and production. Those international agencies that send their consultants to the gleaming glass towers of the elegant quadrants of town to meet with the local private sector are talking to only a fraction of the

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entrepreneurial world. The emerging economic powers of the Third World and former communist nations are the garbage collectors, the appliance manufacturers and the illegal construction companies in the streets far below. The only real choice for the governments of these nations is whether they are going to integrate those resources into an orderly and coherent legal framework or continue to live in anarchy.

In Cairo, residents of older four-story public housing projects build three illegal stories on top of their buildings and sell those apartments to relatives and others.

HOW MUCH DEAD CAPITAL?

Over the past decade my researchers have made surveys of five Third World cities – Cairo, Lima, Manila, Mexico City and Port-au-Prince – in an effort to gauge the value of the possessions of those people who have been locked out of the capitalized economy by discriminatory laws. To be more confident of our results, we focused our attention on the most tangible and detectable of assets: real estate.

Unlike the sale of food or shoes, auto repair, or the manufacture of phony Cartier watches – activities that are difficult to count and even more difficult to value – buildings cannot be hidden. You can ascertain their value simply by surveying the cost of the building materials and observing the selling prices of comparable buildings. We spent many thousands of days counting buildings block by block. Wherever we were authorized to do so we published our results, so that they could be openly discussed and criticized.

We discovered that the way people build in the undercapitalized sector takes as many forms as there are legal obstacles to circumvent. The most obvious form is the shanty built on government-owned land. But our researchers discovered far more creative ways of getting around the real estate laws. In Peru, for instance, people formed agricultural cooperatives to buy estates from their old owners and to convert them into housing and industrial settlements. Because there are no easy legal ways to change land tenure, farmers in state-owned cooperatives illegally subdivided the land into smaller, privately held parcels. As a result, few if any have valid title to their ground.

In Port-au-Prince, even quite expensive properties change hands without anybody bothering to inform the registry office, which is hopelessly backlogged anyway. In Manila, housing springs up on land zoned solely for industrial use. In Cairo, residents of older four-story public housing projects build three illegal stories on top of their buildings and sell those apartments to relatives and others. Also in Cairo, the legal tenants of apartments whose rents were frozen in the early 1950s at sums now worth less than a dollar a year subdivide these properties into smaller apartments and lease them at market prices.

Some of this housing was extralegal from day one, constructed in violation of all kinds

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of laws. Other buildings – the Port-au-Prince houses, the Cairo rent-controlled apartments – originated in the legal system but then dropped out when complying with the law became too costly and complicated. By one route or another, almost every dwelling place in the cities we surveyed exited the legal framework – and the very laws that could have hypothetically provided owners with the representations and institutions to create capital. There still may be deeds or some kind of record in someone's hands. But the real ownership status of these assets has slipped out of the official registry system, leaving records and maps outdated.

The result is that most people's resources are commercially and financially invisible. Nobody really knows who owns what or where, who is accountable for the performance of obligations, who is responsible for losses and fraud, or what mechanisms are available to enforce payment for services and goods delivered. Consequently, most potential assets in these countries have not been identified or realized; there is little accessible capital, and the exchange economy is constrained and sluggish.

This picture of the undercapitalized sector is strikingly different from the conventional wisdom of the developing world. But this is where most people live. It is a world where ownership of assets is difficult to trace and validate, and is governed by no legally recognizable set of rules; where the assets' potentially useful economic attributes have not been described or organized; where they cannot be used to obtain surplus value through multiple transactions because uncertainty leaves too much room for misunderstanding, faulty recollection, and reversal of agreement; where most assets, in short, are dead capital.

HOW MUCH IS THIS DEAD CAPITAL WORTH?

Dead capital, virtual mountains of it, lines the streets of every developing and former communist country. In the Philippines, by our calculation 57 percent of city dwellers and 67

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percent of people in the countryside live in housing that is dead capital. In Peru, 53 percent of city dwellers and 81 percent of people in the countryside live in extralegal dwellings.

The figures are even more dramatic in Haiti and Egypt. In Haiti, 68 percent of city dwellers and 97 percent of people in the countryside live in housing to which nobody has clear legal title. In Egypt, dead-capital housing is home for 92 percent of city dwellers and 83 percent of people in the countryside.

Many of these dwellings are not worth much by Western standards. A shanty in Port-au-Prince may fetch as little as the equivalent of $500, a cabin by a polluted waterway in Manila only $2,700, a fairly substantial house in a village outside Cairo only about $5,000. And in the hills around Lima, a respectable bungalow with a garage and picture windows is valued at only $20,000. But there are a great many such dwellings, and collectively their value dramatically outweighs the total wealth of the rich.

In Haiti, untitled real estate holdings are together worth some $5.2 billion. To put that sum in context, it is four times the total of all the assets of all the legally operating companies in Haiti, nine times the value of all assets owned by the government, and 158 times the value of all foreign direct investment in Haiti's recorded history to 1995.

Is Haiti an exception, a part of Francophone Africa mistakenly put into the American hemisphere where the Duvalier regime delayed the emergence of a systematized legal system? Perhaps. Then let's consider Peru, a Hispanic and Indo-American country with a very different tradition and ethnic makeup. The value of extralegally held real estate in Peru amounts to some $74 billion. This is five times the total valuation of the Lima Stock Exchange before the slump of 1998, 11 times greater than the value of potentially privatizable government enterprises and facilities, and 14 times the value of all foreign direct investment in the country through its documented history. Would you counter that Peru's formal economy has also been stunted by the traditions of the ancient Inca Empire, the corrupting influence of colonial Spain, and the recent war with the Maoist Shining Path?

Very well, then consider the Philippines, a former Asian protectorate of the United States. The value of untitled real estate there is $133 billion, four times the capitalization of the 216 domestic companies listed on the Philippines Stock Exchange, seven times the total deposits in the country's commercial banks, nine times the total capital of state-owned enterprises, and 14 times the value of all foreign direct investment.

Perhaps the Philippines, too, is an anomaly – something to do with how Christianity developed in former Spanish colonies. If so, let's consider Egypt. The value of Egypt's dead capital in real estate is, by the tally we made with our Egyptian colleagues, some $240 billion. That is 30 times the value of all the shares on the Cairo Stock Exchange and, as I noted previously, 55 times the value of all foreign investment in Egypt.

In every country we have examined, the entrepreneurial ingenuity of the poor has created wealth on a vast scale – wealth that also constitutes by far the largest source of potential capital for development. These assets not only far exceed the holdings of the government, the local stock exchanges, and foreign direct investment; they are many times greater than all the aid from advanced nations and all the loans extended by the World Bank.

The results are even more astonishing when we take the data from these four countries and project it over the Third World and

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former communist nations as a whole. We estimate that about 85 percent of urban parcels in these nations, and between 40 percent and 53 percent of rural parcels, are held in such a way that they cannot be used to create capital.

Putting a value on all these assets is inevitably going to yield a rough number. But we believe that our estimates are quite conservative. By our calculations, the total value of the real estate held but not legally owned by the poor of the Third World and former communist nations is at least $9.3 trillion.

This is a number worth pondering: $9.3 trillion is about twice as much as the total circulating United States money supply. It is very nearly as much as the total value of all the companies listed on the main stock exchanges of the world's 20 most developed countries: New York, Tokyo, London, Frankfurt, Toronto, Paris, Milan, the Nasdaq and a dozen others. It is more than 20 times the total direct foreign investment into all Third World and former communist countries in the 10 years after 1989, 46 times as much as all the World Bank loans of the past three decades, and 93 times as much as all development assistance from all advanced countries to the Third World in the same period.

ROBIN MOYER/TIMEPIX

ACRES OF DIAMONDS

The words "international poverty" too easily bring to mind images of destitute beggars sleeping on the curbs of Calcutta and hungry African children starving on the sand. These scenes are of course real, and millions of our fellow human beings demand and deserve our help. Nevertheless, the grimmest picture of the Third World is not the most accurate. Worse, it draws attention away from the arduous achievements of those small entrepreneurs who have triumphed over every imaginable obstacle to create the greater part of the wealth of their societies. A truer image would depict a man and woman who have painstakingly saved to construct a house for themselves and their children, and who are creating enterprises where nobody imagined they could be built. I resent the characterization of such heroic entrepreneurs as contributors to the problem of global poverty. They are not the problem. They are part of the solution.

In the years after the American Civil War,

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a lecturer named Russell Conwell crisscrossed America delivering a message that stirred millions of people. He told the story of an Indian merchant who had been promised by a prophet that he would surely become rich beyond all imagining if only he would seek his treasure. The merchant traveled the world only to return home old, sad and defeated. As he re-entered his abandoned house, he needed a drink of water. But the well on his property had silted up. Wearily, he took out his spade and dug a new one – and instantly struck the Golconda, the world's greatest diamond mine.

Conwell's message is a useful one. Leaders of the Third World and former communist nations need not wander the world's foreign ministries and international financial institutions seeking their fortunes. In the midst of their own poorest neighborhoods and shantytowns, there are – if not acres of diamonds – trillions of dollars, all ready to be put to use

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if only the mystery of how assets are transformed into live capital can be unraveled.

THE MYSTERY OF POLITICAL AWARENESS

The breakdown of population patterns and mandatory law has been an unmistakable trend in developing countries for the past 40 years and in former communist countries for the past 10. Three million illegal migrants besieging Beijing have created a jumble of sweatshops on the outskirts of the city. The underground market now accounts for 50 percent of GDP in Russia and Ukraine and a whopping 62 percent in Georgia. The International Labor Organization reports that since 1990, 85 percent of all new jobs in Latin America and the Caribbean have been created in the extralegal sector. In Zambia, only 10 percent of the work force is legally employed.

Governments have tried to force the independent jitneys and shabby taxis that glut traffic to meet minimum safety standards; they are cracking down on theft and loss of water and electricity, and trying to enforce patents and copyrights; they have arrested and executed as many gangsters and drug traffickers as possible (at least the more famous ones) and jailed others (at least for a while); they have tightened security measures to control the disquieting influence of extreme political sects among the uprooted and vulnerable multitudes.

Each of these problems has its own academic specialty to study it and its own political program to cope with it. Few seem to realize that what we have here is one huge, worldwide industrial revolution: a gigantic movement away from life organized on a small scale to life organized on a large one. For better or for worse, people outside the West are fleeing self-sufficient and isolated societies in an effort to raise their standards of living by becoming interdependent in much larger markets.

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Britain supported just eight million people when it began its 250-year progression from the farm to the laptop computer. Indonesia is making that same journey in only four decades and carrying a population of more than 200 million. No wonder its institutions have been slow to adapt. But adapt they must. A tide of humanity has moved from isolated communities to participate in ever-widening circles of economic and intellectual exchange. It is this tide that has transformed Jakarta, Mexico City, São Paolo, Nairobi, Bombay, Shanghai and Manila into megacities of 10, 20, 30 million and overwhelmed their political and legal institutions.

Whereas all manner of anonymous business transactions are widespread in advanced countries, the migrants in the developing world can deal only with people they know and trust. Such informal, ad hoc business

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arrangements do not work very well. The wider the market, as Adam Smith long ago pointed out, the more minute the division of labor can be. And as labor grows more specialized, the economy grows more efficient, and wages and capital values rise. A legal failure that prevents enterprising people from negotiating with strangers defeats the division of labor and fastens would-be entrepreneurs to smaller circles of specialization and low productivity.

The advances of the West, right up to today's exponential growth of electronic information and telecommunications technology, could happen only because the property-rights systems required to make them work were already in place. Integrated legal property systems destroyed most closed groups while inviting the creation of a larger network where the potential to create capital increased substantially. In this sense, property obeys what is known as Metcalfe's Law (named after Bob Metcalfe, the inventor of the Ethernet standard that commonly networks personal computers). According to Metcalfe's Law, the value of a network – defined as its utility – is roughly proportional to the square of the number of users. One telephone is useless: whom do you call? Two telephones are better, but not much. It is only when most of the population has telephones that the power of the network reaches its full potential to change society.

Like computer networks, which had existed for years before anyone thought to link them, property systems become tremendously powerful when they are interconnected in a larger network. Only then is the potential of a particular property right not limited to the imagination of its owner, neighbors or acquaintances, but subject to a larger network of other imaginations.

When migrants move from developing and former communist countries to advanced nations, well-developed institutions eventually absorb them into a networked property system that helps them produce surplus value. The people who migrate within their own countries are not being accommodated in this way – at least not quickly enough. Poorer countries lack the institutions to integrate the migrants into the formal sector, fix their assets into fungible forms, make their owners accountable agents, and provide them with connecting and leveraging devices that allow them to interface productively and generate capital within a large legal market. So the migrants invent, at the expense of the legal order, a variety of extralegal arrangements to substitute for the laws and institutions they need to cooperate in an expanded market.

The fundamental problem for non-Western nations is not that people are moving to urban centers, that garbage is piling up, that infrastructure is insufficient, or that the countryside is being abandoned. All of that happened in advanced nations. Nor is the problem simply urban growth. Los Angeles has grown faster than Calcutta in this century, and Tokyo is three times bigger than Delhi. The primary problem is the delay in recognizing that most of the disorder occurring outside the West is the result of a revolutionary movement that is full of promise.

Why has everyone missed the real problem? First, most of us do not see that the surge in the world's extralegal populations over the past 40 years has generated a new class of entrepreneurs with their own legal arrangements. Government authorities see only a massive influx of people and illegal workers and the threat of disease and crime. So while the housing ministry deals with its own issues and the ministries of health and justice focus on theirs, no one notices that the real cause of

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the disorder is not population, or urban growth, or even a poor minority, but an outmoded system of legal property.

The second blind spot is that few recognize that the problems they face are not new. The migration and extralegality plaguing cities in the developing and former communist world closely resemble what the advanced nations of the West went through during their own industrial revolution. They, too, focused on trying to solve their problems one by one. The lesson of the West is that piecemeal solutions and stopgap measures to alleviate poverty were not enough. Living standards rose only when governments reformed the law and the property system to facilitate the division of labor.

BLIND SPOT ONE: LIFE OUTSIDE THE BELL JAR

Back in the 1980s, when my colleagues and I in Peru began our work, most officials assumed that our part of the world was to a great extent controlled by law. To be sure, there were poor people holding jobs and property outside the law, but this extralegal sector was considered relatively small and thus a marginal issue. Advanced nations had their share of poverty, unemployment and black markets, and we had ours. Dealing with them was a job mainly for the police or the handful of academic sociologists who had devoted their careers to studying homegrown exotica.

But no one even knew how to measure what the poor were actually doing. And so my colleagues and I decided to put away our books and academic journals and visit the real experts on this problem: the poor themselves. Once we went into the streets to look around and listen, we began stumbling across surprising facts.

For instance, the Peruvian construction industry was in a slump. Building was down and workers were being laid off. Curiously, however, at outlets for construction materials, the cash registers were still ringing. We discovered that the poor were buying more cement than ever for their construction projects – houses, buildings and businesses that were not legally registered or titled, and therefore never made it onto the computer screens of the government economists and statisticians. We began to sense a vibrant, independent, officially invisible extralegal economy buzzing in the cities throughout the developing world.

In Brazil, the construction industry reported a mere 0.1 percent growth in 1995; yet cement sales soared by nearly 20 percent. The reason for the apparent anomaly, according to a Deutsche Morgan Grenfell analysis, is that 70 percent of the region's construction never makes it into the records. The extralegal sector, we realized, was hardly a small issue. It was enormous.

Extralegal zones in developing countries are characterized by modest homes crammed together on city perimeters with a myriad of workshops in their midst, armies of vendors hawking their wares on the streets, and countless crisscrossing minibus lines. All seem to have sprung out of nowhere. Steady streams of small-crafts workers, tools under their arms, have expanded the range of activities carried out in the city. Ingenious local adaptations add to the production of essential goods and services, dramatically transforming certain areas of manufacturing, retail distribution, building and transportation. The passive landscapes that once surrounded Third World cities have become the latest extensions of the metropolis, and European-style cities have yielded to a more noisy, local personality blended with drab imitations of suburban America's commercial strips.

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FORREST ANDERSON/TIMEPIX

The sheer size of most of these new cities creates its own opportunities. New business owners have emerged who, unlike their predecessors, are of very humble origins. Upward mobility has increased. The patterns of consumption and exclusive luxuries of the old urban society have been displaced by other, more widespread ones.

The March to the Cities

Migration is, of course, the key factor in this urban growth. Its causes, however, are hard to pinpoint. Commentators in each country offer various explanations: a war, an agrarian-reform program, the lack of agrarian reform, a foreign embargo on international trade, the opening of international trade, terrorism and guerillas, moral decay, failed capitalism, failed socialism – even bad taste. (It is so much prettier in the countryside. Why don't they just stay there?)

Lately, however, opinion has been converging around a few general causes. The most visible explanation for the wave of migration throughout the developing world is better roads. New means of communication provided an additional incentive. Radio, in particular, aroused expectations of increased consumption and income. Modernity sounded within reach of anyone with the courage to head down the road after it.

There is also fairly widespread agreement that agricultural crises were decisive factors in many countries. The modernization of agriculture and the uncertain market for some crops following World War II triggered massive layoffs of farm laborers on traditional estates and unleashed vast contingents of people prepared to search for new horizons.

Then, too, there was the problem of property rights in the countryside. The long, complex process of agrarian reform only com-

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pounded the traditional difficulties of acquiring land suitable for farming. Unable to own land or find work in the countryside, many people migrated to the cities.

Another powerful attraction was the lower infant mortality rate in most principal cities. This gap widened as medical services in the cities began improving after World War II. Better wages were also an important incentive. In Latin America, for example, people leaving the countryside to take up semiskilled employment in cities could double or triple their monthly income. Higher pay offset the risk of unemployment. Life in the far-off cities not only seemed better; it was better.

Even the growth of national bureaucracies became an incentive for migration. The centralization of power in the hands of government officials meant that most of the government offices competent to provide advice, answer requests, issue permits, or provide jobs were located in the cities. And any migrants seeking a brighter future for their children knew that the opportunities for education were much better there. To underemployed peasants with few resources other than their own ingenuity, education was an increasingly valuable and productive investment.

Migration, therefore, is hardly an irrational act. It is the product of a calculated assessment by rural people of their current situation measured against the opportunities open to them elsewhere. Rightly or wrongly, they believed that migrating to larger markets would benefit them. The move, however, was not an easy one.

Poor People, Go Home

The greatest hostility toward migrants came from the legal system. At first, the system could easily absorb or ignore them because the small groups who had arrived were hardly likely to upset the status quo. However, as their numbers grew to the point where they

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could no longer he ignored, newcomers found themselves barred from legally established social and economic activities. It was tremendously difficult to get access to housing, enter formal business, or find a legal job. The legal institutions of most Third World countries had been developed over the years to serve the interests of certain urban groups; dealing with the peasants in rural areas was a separate matter. As long as the peasants stayed put, the implicit legal discrimination was not apparent. Once they settled in the cities, however, they experienced the apartheid of formal law.

If there are costs to becoming legal, there are also bound to be costs to remaining outside the law. We found that operating outside the world of legal work and business was surprisingly expensive. In Peru, for example, the cost of operating a business extralegally includes paying 10 to 15 percent of its annual income in bribes and commissions to the authorities. Add to such payoffs the costs of avoiding penalties, making transfers outside legal channels, and operating from dispersed locations and without credit, and the life of the extralegal entrepreneur turns out to be far more costly and full of daily hassles than that of the legal one.

Perhaps the most significant cost was caused by the absence of institutions that create incentives for people to seize economic and social opportunities to specialize within the marketplace. People who could not operate within the law also could not hold property efficiently or enforce contracts through the courts; nor could they reduce uncertainty through limited-liability systems and insurance policies, or create stock companies to attract additional capital and share risk. Unable to raise money for investment, they could not achieve economies of scale or protect their innovations through patents.

Blocked from entering what the French economic historian Fernand Braudel called the "bell jar" of legal privilege, the poor could never get close to the legal mechanisms necessary to generate capital. The disastrous economic effects of this apartheid are most strikingly visible in the lack of formal property rights over real estate. In every country we researched, some 80 percent of land parcels were not protected by up-to-date records or held by legally accountable owners. Any exchange of such extralegal property was therefore restricted to closed circles of trading partners, keeping the assets outside the expanded market.

Owners of extralegal assets are thus denied access to the credit that would allow them to expand their operations – an essential step toward starting or growing a business in advanced countries. In the United States, for example, up to 70 percent of the credit that new businesses receive comes from using formal titles as collateral for mortgages. Extralegality also means that the incentives for investment provided by legal security are missing.

Cut off from the legal system, the migrants' only guarantee of prosperity lay in their own hands. They had to compete not only against other people but against the system as well. If the legal systems of their own countries were not going to welcome them, they had no alternative but to set up their own extralegal systems. These extralegal systems, in my opinion, constitute the most important rebellion against the status quo in the history of developing countries since their independence, and in the countries of the Soviet bloc since the collapse of communism.

Growing Extralegality

By 2015, more than 50 cities in developing countries will have 5 million or more people,

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with most living and working extralegally. The extralegal sector is omnipresent in the developing and former communist countries. New activities have emerged and gradually replaced traditional ones. Walk down most streets and you are bound to bump into extralegal shops, currency exchanges, transportation and other services. Even many of the books for sale have been printed extralegally.

Entire neighborhoods have been acquired, developed and built on the fringes of – or in direct opposition to – government regulations. For every 100 homes built in Peru, only about 30 have legal title. Throughout Latin America, we found that at least three-quarters of all buildings were in the undercapitalized sector and that 80 percent of all real estate was held outside the law. The extralegal sectors in the developing world account for 50 to 75 percent of all working people and are responsible for up to two-thirds of the total economic output of the Third World.

Consider Brazil: 30 years ago, more than two-thirds of housing construction was for rent; today, rentals constitute scarcely 5 percent of Brazil's construction. Most of that market has moved to the informal parts of Brazilian cities – the *favelas*. *The Wall Street Journal* reported in 1997 that only 10 percent of land occupied in the Brazilian Amazon jungle is covered by property titles.

Unlike the situation in advanced nations, where the underclass represents a small minority living on the margin of society, in some countries extralegality has always been the mainstream. For example, in most countries we surveyed, the value of extralegal real estate alone is many times greater than total savings and time deposits in commercial banks, all foreign direct investment and all public enterprises together.

This should not, on reflection, be surprising. Real estate accounts for half the national wealth of advanced nations; in developing countries, the figure is closer to three-quarters. Extralegal settlements are often the only avenue for investment in developing and former communist countries and therefore represent an important part of the savings and capital formation process. Moreover, the growing contribution of cities to GDP suggests that a great deal of potential capital and technological skill is being accumulated, mainly in urban areas.

The Extralegals Have Come to Stay

Most governments in most nations are in no condition to compete with extralegal power. In strictly physical terms, extralegal ventures have already overtaken government efforts to provide housing for migrants and the poor. In Peru, until the end of the 1980s for example, government investment in low-income housing hovered at 2 percent of the housing investment in the extralegal sector. Including middle-class housing raised the government share to only 10 percent. In Haiti in 1995, the value of extralegal real estate was nearly 10 times greater than all the holdings of the Haitian government.

The disadvantage to extralegal arrangements is that they are not integrated into the formal property system and as a result are not adaptable to most transactions; they are not connected into the financial and investment circuit and their members are not accountable to authorities outside their own social contract.

These arrangements are run by a large variety of organizations, including urban development associations, farming conventions, small-merchant associations, miners' claim clubs, agrarian reform beneficiaries, private housing cooperatives, settlement organizations, residential boards and communal

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CHRIS NIEDENTHAL/TIMEPIX

committees. Extralegality is rarely antisocial in intent. The "crimes" extralegals commit are designed to achieve such ordinary goals as building a house, providing a service, or developing a business. Far from being the cause of disarray, extralegal law is the only way settlers have to regulate their lives and transactions. As a result, nothing could be more socially relevant to the way the poor live and work.

The extralegal settlements the migrants inhabit may look like slums, but they are quite different from the inner-city slums of advanced nations. The latter consist of once-decent buildings falling apart from neglect. In the developing world, the basic shelters of the poor are likely to be improved, built up and progressively gentrified. Whereas the houses of the poor in advanced nations typically lose value over time, the buildings in the poor settlements of the developing world become more valuable, evolving within decades into the equivalent of working-class communities in the West. Above all, the extralegal settlers, contrary to their lawless image, share the desire of civil society to lead peaceful, productive lives.

As the economic activities with which they are associated have grown and diversified, these extralegal organizations have also begun to assume the role of government. To varying degrees, they have become responsible for the provision of such basic infrastructure as roads, water supply, sewage systems, electricity, the construction of markets, the provision of transport services, and even the adminis-

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tration of justice and the maintenance of order. In the face of the extralegals' advance, governments have retreated. But they are inclined to consider each concession temporary, "until the crisis has passed." In reality, however, this strategy is only a way of delaying their inevitable defeat. In some cases, governments have created exceptions for some extralegal enterprises – legal enclaves as it were, where originally illegal enterprises can operate without persecution, but without integrating them so that they enjoy the protection and benefits of the entire legal system. These arrangements avoid open confrontation and as such can be considered a sort of transitory legal peace treaty. In Egypt, for example, experts are already talking about "semi-formal" housing.

Extralegality is closely associated with misery. Yet extralegals are moving up the economic ladder. According to the Technical Evaluations Organization of Peru, the value of land in the formal sector of Lima averages some $2,000 per acre, whereas in the area of Gamarra, where a great deal of Peru's informal manufacturing sector resides, the value can go as high as $121,000 an acre. In Aviacion, another extralegal center in Lima, land is worth $40,000 per acre, and in Chimu of the Zárate section, it is $16,000 an acre. By contrast, in Miraflores and San Isidro, Lima's most prestigious addresses, the value of legal, titled property ranges from $20,000 to $40,000 per acre.

BLIND SPOT TWO: HISTORY REPEATS ITSELF

The only question that remains is how soon governments will begin to legitimize these extralegal holdings by integrating them into an orderly and coherent legal framework. The alternative is perpetuating a legal anarchy in which the existing property rights system competes with the extralegal one. If these countries are ever to achieve a single legal system, official law must adapt to the reality of a massive extralegal push toward property rights. The good news is that legal reformers will not be stepping into an abyss. The challenge they are up against, though enormous, has been met before in many countries. When the Industrial Revolution began in Europe, governments were also plagued with uncontrollable migration, growth of the extralegal sector, urban poverty and social unrest. They too, initially addressed these problems piecemeal.

The Move to the Cities

Most scholars link the coming of the great industrial and commercial revolution in Europe to the mass migrations to its cities, the growth of the population as a result of a decline in plagues and a reduction in rural incomes compared with urban incomes. In England, the first wave of migration began late in the 16th century. Disconcerted by the resulting unrest, authorities tried to keep the peace with various stopgap measures, like distributing food among the poor. There were also persistent measures to persuade people to return to the countryside. Laws enacted in 1662, 1685 and 1693 required that citizens return to their place of birth or their previous fixed residence as a condition of receiving relief. The aim was to prevent more families and laborers from migrating to the cities in search of employment.

In 1697, a law was passed allowing migrants to move about England only if they obtained a certificate of settlement from the authorities in their new place of residence. Although these laws did discourage migration among families and the infirm, young, able-bodied and ambitious unmarried men devised ways of going to the cities. They were

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also the sort who made successful entrepreneurs – or violent revolutionaries.

Most migrants did not find the jobs they expected. Restrictive regulations, particularly difficulties in obtaining permission to expand or diversify activities, limited the capacity of formal businesses to grow and to provide jobs for new laborers. Some found temporary work or entered domestic service. Many were forced to settle precariously on the outskirts of Europe's cities, awaiting admission to a guild or a job in a legal business.

Social unrest was inevitable. No sooner did the migration to the cities begin than the existing political institutions fell behind a rapidly changing reality. The rigidity of mercantilist law and custom prevented migrants from realizing their full economic potential. Overcrowding, disease and the inevitable difficulties of country people adapting to life in the city further aggravated social conflict.

Instead of adapting to this new urban reality, governments created more laws and regulations to try to stamp it out. More regulations brought more infringements – and soon new laws were passed to prosecute those who broke the old ones. Lawsuits proliferated; smuggling and counterfeiting were widespread. Governments resorted to violent repression.

The Emergence of Extralegality

European migrants who did not find legal employment gradually began to open illegal workshops in their homes. The migrants, of course, could not afford to be choosy; extralegal work was their only source of income, and the extralegal sector of the economy began spreading rapidly. The economic historian Eli Heckscher quotes Oliver Goldsmith in 1762, "There is scarcely an Englishman who does not almost every day of his life offend with impunity some express law ... and none but the venal and the mercenary attempt to enforce them."

If these countries are ever to achieve a single legal system, official law must adapt to the reality of a massive extralegal push toward widespread property rights.

Two French decrees (1687 and 1693) recognized that one reason why rules were not being complied with was that the workers, then even more illiterate than in those developing countries today, could not meet the simple legal requirement that textile manufacturers identify their work. Still, these migrant workers were efficient. Adam Smith once remarked that, "If you would have your work tolerably executed, it must be done in the suburbs where the workmen, having no exclusive privilege, have nothing but their character to depend on, and you must then smuggle it into the town as well as you can."

Authorities and legal businessmen were not as impressed with competition as Adam Smith was. In England, during the decades following the restoration of the monarchy in 1660, some traditionalists began to complain about the growing numbers of peddlers and street vendors, the disturbances that took

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place in front of established shops, and the appearance of new shopkeepers in many small cities. Formal traders tried in vain to get rid of the newcomers.

In Paris, the legal battle between tailors and secondhand clothes dealers went on for more than 300 years. Printed calico imports were prohibited in 1700 in order to protect England's woolen industry. But enterprising English manufacturers produced their own, managing to find exceptions or loopholes in the law.

One way around the ban on printing cotton-based fabrics was to use fustians – English calicoes made with a linen warp. Spain also punished its extralegal entrepreneurs. In 1549, Emperor Charles I promulgated 25 ordinances aimed at extralegal businesses. One law called for authorities to mutilate fabric samples by cutting off the manufacturer's mark, so that buyers would know they were purchasing extralegal goods.

Government repression of extralegals was common, harsh and, in France, deadly. In the mid-18th century, laws prohibiting them from manufacturing, importing or selling cotton prints carried penalties ranging from slavery and imprisonment to death.

The extralegals remained undeterred. Heckscher estimates that within one 10-year period in the 18th century, the French executed more than 16,000 smugglers and clandestine manufacturers for the illegal manufacture or import of printed calicoes. An even larger number were sentenced to the galleys. In the town of Valence alone, 77 extralegal entrepreneurs were hanged, 58 were broken on the wheel, and 631 ended up in the galleys.

The authorities prosecuted extralegals so harshly not only because they wanted to protect established industries, but also because multicolored prints made taxes more difficult to collect. Although it was easy to identify manufacturers of single-colored textiles, and thus verify whether they were paying all their taxes, calicoes could be made with a variety of colors, making it much more difficult to identify their origin.

The state relied heavily on the guilds – whose main function was to control access to legal enterprise – to help identify lawbreakers. But by making the laws more stringent instead of adjusting them to include extralegal manufacturing, the authorities simply forced entrepreneurs to the suburbs. When the English Statute of Artificers and Apprentices of 1563 fixed wage rates for workers and required that they be adjusted annually according to the prices of basic necessities, many of the earliest extralegals moved their businesses to outlying towns or established new suburbs where state supervision was less strict and regulations more lax – or simply inapplicable. Retreating to the suburbs also allowed extralegals to escape the watchful eye of the guilds, whose jurisdiction extended only to city boundaries.

Eventually, extralegal competition increased to the point that formal business owners had no alternative but to subcontract part of their production to suburban workshops, narrowing the tax base and causing tax rates to rise. A vicious circle set in. Higher taxes exacerbated unemployment and unrest, prompting greater migration to the suburbs and more subcontracting to extralegal manufacturers. Some extralegals did so well that they won the right to enter formal business – though not without paying their share of bribes.

The guilds fought back. Under the Tudors, numerous laws in England prohibited extralegal workshops and services in the suburbs. But the sheer number of extralegals and their skill at avoiding detection thwarted these efforts. Among the most notable failures were

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the hatmakers' and coverlet makers' guilds in Norwich, which, after a protracted and highly publicized campaign against extralegal operators, were unable to enforce their exclusive legal right to manufacture. Competition had left the guilds reeling.

The Breakdown of the Old Order

European governments were gradually forced to retreat in the face of growing extralegality, just as governments in developing and former communist countries are doing today. Unable to stop the establishment of extralegal settlements, King Gustavus Adolphus of Sweden visited each settlement and gave it his blessing in order to maintain an appearance of government control. In England, the state was forced to recognize that new industries were developing primarily in places where there were no guilds or other legal restrictions; indeed, extralegals had created their own suburbs and towns specifically to avoid control by the state and the guilds.

Moreover, the extralegal industries were more efficient and successful. It was widely acknowledged that the cotton textile industry had boomed because it was not regulated as strictly as the woolen industry. People soon began noticing that the extralegal settlements were producing better goods and services than their legal competitors inside the bell jars.

The extralegals' numbers, persistence and success began to undermine the very foundations of the mercantilist order. Whatever success they had was won in spite of the state, and they were bound to view the authorities as their enemies. In those countries where the state outlawed and prosecuted extralegal entrepreneurs instead of adjusting the system to absorb their enterprise, not only was economic progress delayed, but unrest increased and spilled into violence. The best-known manifestations were the French and Russian Revolutions.

Those countries that adapted quickly, however, made a relatively peaceful transition to a market economy. When enlightened states realized that a working extralegal sector was socially, politically and economically preferable to a growing number of unemployed migrants, authorities withdrew support from the guilds. The result in England was that fewer and fewer people applied for admission to the guilds, thereby setting the stage for the state to alter drastically the way in which business was conducted.

The power of the state also declined. Any legal system as rigid as the one that preceded the Industrial Revolution was bound to be rife with corruption. Most production supervisors, whether they belonged to the guilds or were appointed by the state, were continually accused of corruption or neglect of duties – a situation that was attributed to lack of civic respect for the law.

Even members of Parliament, which by the end of the 17th century had the power to authorize the establishment of businesses, were known to receive bribes for special favors. Local authorities were worse. In 1601, a speaker in the House of Commons defined a justice of the peace as "a living Creature that for half a Dozen of Chickens will Dispense with a whole Dozen of Penal Statutes."

Public officials sought to blame legislative failures not on bad laws but on inadequate enforcement. But suburban justices of the peace had little incentive to enforce laws that had been drafted in the cities and were unacceptable to suburban residents. By the end of the 18th century, the entire legal apparatus had been weakened and in some countries was completely corrupt.

At a time when government controlled everything, people placed all their economic

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expectations in the state. This gave rise to a pattern typical of precapitalism: when wages went up faster than food prices, merchants called for wage ceilings; when food prices went up faster than wages, workers demanded a minimum wage and a price ceiling on foodstuffs. Prices, incomes and wages were fixed by political pressure and action, a situation that discouraged industrial and agricultural production and hiring. Neither minimum nor maximum prices, therefore, could solve the problems of chronic scarcity and unemployment.

Amid such economic crises and social unrest, the strongest and most self-confident people chose to emigrate or join revolutionary movements. Between the 17th and 19th centuries, hundreds of thousands of Italians, Spaniards, French and other Europeans emigrated to other lands in search of a better future. In France, the persecution of the Huguenots and the extralegals in the textile sector prompted many entrepreneurs and skilled workmen to leave, mainly for England and Holland, where they and their hosts managed to prosper.

Finally – After 300 Years

As badly structured regulations stifled formal businesses and as extralegals openly defied the law and voiced their dissatisfaction at being pushed to the margins, the stage was set for politicians to adapt to the facts on the ground. The law had ossified at about the same rate as the migrant settlements encircled the cities. And as peddlers, beggars and thieves invaded the streets, as extralegally manufactured or smuggled goods glutted the markets, official corruption became rampant, and violence disrupted civil society.

In most western European countries, law began adapting to the needs of common people, including their expectations about property rights, during the 19th and early 20th centuries. By that time, the Europeans had concluded that it was impossible to govern the Industrial Revolution and the presence of massive extralegality through minor ad hoc adjustments. Politicians finally understood that the problem was not people but the law, which was preventing people from being more productive.

Although the picture of precapitalist society and the circumstances of its decline are quite similar in most European countries, the outcome was not always the same. Countries that made efforts to integrate extralegal enterprise prospered more quickly than countries that resisted change. By easing access to formal property, reducing the obstacles engendered by obsolete regulations, and allowing existing local arrangements to influence lawmaking, European politicians eliminated the contradictions in their legal and economic systems and allowed their nations to carry the Industrial Revolution to new heights.

Europe's past strongly resembles the present of developing and former communist countries. The fundamental problem is not that people are invading and clogging the cities, that public services are inadequate, that garbage is piling up, that ragged children beg in the streets, or even that the benefits of macroeconomic reform programs are not reaching the majority. Many of these difficulties existed in Europe (and also the United States) and were eventually overcome. The real problem is that we have still not recognized that all these difficulties constitute a sea change in expectations: as the poor flow into cities and create extralegal social contracts, they are forcing a major redistribution of power. Once the governments of developing and former communist countries accept that, they can begin to catch the wave instead of being engulfed by it.

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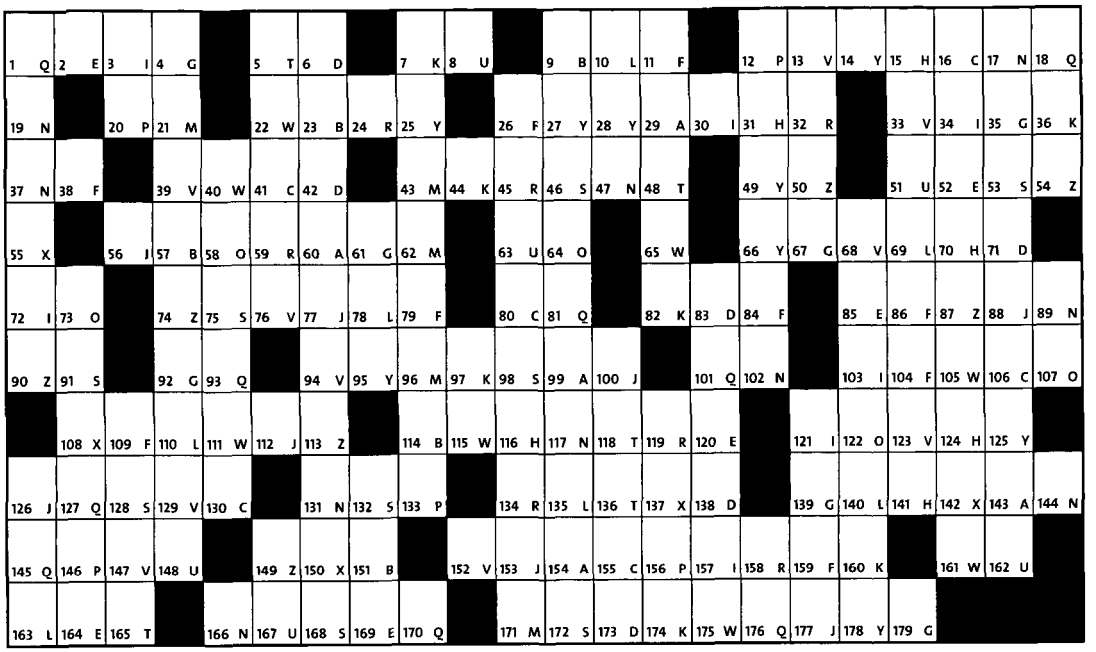
BY STEVEN POSTREL



After answering each clue, copy the letters to the corresponding numbers in the grid, where they will form a quotation. Words begin and end at shaded squares, and so may continue from one row to the next. The first letters of each answer, when spelled in order, give the author and publication of the quotation.

Answers on page 95

A. Inveigle 143 60 154 29 99

B. Some Nigerians 114 9 57 151 23

C. Asks for 41 130 80 155 16 106

D. "Yeah, right!" (2 words) 42 138 6 173 83 71

E. Aerial display 85 169 52 2 120 164

F. Unnatural 38 79 159 86 104 11 84 109 26

G. What JFK failed to do (3 words) 179 92 67 35 61 139 4

H. Blair's pen name 15 124 116 31 141 70

I. Official's implement 72 157 34 3 103 30 121

J. "The Empire Strikes Back" (2 words) 88 77 177 56 153 112 100 126

K. *When we all die* (2 words) 36 44 82 160 97 7 174

L. Pivoting slats 78 140 69 135 110 10 163

M. Not too svelte 43 171 96 21 62

N. Unbreakable 17 37 166 89 131 47 19 144 102 117

O. Cut 64 107 122 73 58

P. One who may be useful 146 133 12 20 156

Q. Stir 145 81 176 1 127 170 101 93 18

R. Pressing 119 32 158 59 134 24 45

S. Unresponsive state 172 53 128 98 91 168 132 75 46

T. "Egads!" to Tevye (2 words) 5 48 118 136 165

U. Big shots 148 63 167 162 51 8

V. Departing from the script (2 words) 94 39 33 76 123 68 152 147 13 129

W. Big name in wireless 22 105 161 175 40 115 111 65

X. Below, in a law review 142 55 108 137 150

Y. Secret name 178 66 25 95 49 27 14 125 28

Z. Enemy of Socrates 113 50 90 149 54 74 87

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BY ROSS DEVOL

The sources of local prosperity – the things that distinguish vibrant local economies from less successful ones – are changing. Localities that ignore these changes do so at their peril. In the old economics of place, physical assets – proximity to raw materials, transportation infrastructure and the like – determined economic success. In the new economics of place, what counts is a mix of tangible and intangible resources – everything from weather to culture to the crime rate – that makes it possible to maintain high-end human capital in productive networks.

Knowledge-driven innovation is critical to wealth and income creation in this new economics of place. Indeed, the degree to which a region's knowledge assets are harnessed and converted into successful innovations, products and services will determine its economic future. Thus, strikingly different attributes – among them research and development infrastructure, access to risk capital and cultural tolerance for entrepreneurship – are keys to regional success.

Because knowledge is generated and shared more efficiently in close proximity, economic activity based on new knowledge has a high propensity to cluster geographically. In leading clusters, fewer innovations will escape to other regions – or at least they will do so at a slower rate.

But the New Economy is based upon more than high-tech industries. Places that can attract and retain firms proficient at deploying information technology (in addition to producing it) will be at a competitive advantage. These technologies are moving us from a vertically oriented, command-and-control hierarchy to flexible networks organized by entrepreneurs, with collaboration as the centerpiece. Because speed is vital in the New Economy, structures that impede rapid decision-making are rendered obsolete.

ROSS DEVOL is director of regional and demographic studies at the Milken Institute.

RESEARCH & DEVELOPMENT, AND INNOVATION ASSETS

The new raw materials of technology-based economic development are research and development, and innovation capacities. The research and development infrastructure of a region is critical to building new industry clusters from breakthrough technologies and to sustaining the vibrancy of existing industry clusters. A new cluster can be formed by importing firms that have commercialized technology elsewhere, but regions in which basic research and development activities take place have distinct advantages in building a cluster that sticks.

Research laboratories – private, govern-

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ment and university-based – are important drivers of economic development. Investments in research and development strengthen local research competency and attract further investments by the private and public sectors in a process of feedback loops.

Private industry finances and conducts more research and development than all other sectors combined. Places with firms willing to reinject their profits into their innovation pipeline will likely remain engines of economic development. And despite the widely acclaimed successes of university-based research and development centers like Silicon Valley and Raleigh-Durham, our research suggests that industry research and development is more important for sustained income and wealth creation than university-based research and development is.

Don't misunderstand: federally funded research and development can be an important development asset. Over the past half-century, the federal government has enhanced the position of the well-known technology clusters. These facilities were often located where they are for strategic, national security, and political reasons. But their placement was often critical to the rise of fabulously successful technology clusters, like Silicon Valley.

University research has generally focused on fundamental knowledge and scientific discovery. However, the presence of academic research facilities has a short-term payoff, too, because it serves as a magnet for business. Moreover, universities are increasingly responding to the new economic environment by conducting applied research for private sponsors. Indeed, for maximum economic leverage, the culture at university and government research facilities must be open to the prospect of commercial application. Localities in which academics are encouraged to license their research and to move freely between the nonprofit and the private sectors will be ahead of the game.

RESEARCH, DEVELOPMENT AND INNOVATION INDEX

STATE	FEDERAL R&D	INDUSTRIAL R&D	ACADEMIC R&D	PATENTS	R&D COMPOSITE
MA	94	98	98	96	96.5
CT	80	84	82	90	84.0
CA	86	88	72	86	83.0
CO	84	82	84	82	83.0
RI	88	96	78	56	79.5
NH	76	86	64	88	78.5
NM	98	76	86	48	77.0
MD	100	46	100	58	76.0
WA	70	94	62	70	74.0
UT	54	68	88	72	70.5
ND	34	14	52	18	29.5
WY	28	2	56	20	26.5
SC	10	30	24	30	23.5
WV	50	26	4	8	22.0
OK	6	20	26	32	21.0
LA	14	8	36	22	20.0
KY	2	24	22	26	18.5
MS	42	10	16	2	17.5
ME	16	18	6	16	14.0
AR	4	12	8	6	7.5
SD	8	4	2	12	6.5

HUMAN-CAPITAL CAPACITY

A locality's most important source of competitive advantage is the knowledge embedded in its people. In the past, firms and industry agglomerations attracted people; in the New Economy, concentrations of talent are attracting firms.

Not so long ago, labor was seen as an expense to be minimized and certainly not as a reservoir of exploitable human capital. Even today, the balance sheets of most corporations show labor solely as an expense. Yet as Gary Becker, the University of Chicago Nobel laureate, reckons, roughly three-quarters of the American capital stock now consists of knowledge – much of it embodied in workers. And by no coincidence, many technology firms have market caps that amount to 10 to 20 times the value of their physical assets.

A successful enterprise must endeavor to continually create and utilize knowledge to

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sustain competitive advantage. Localities with firms that understand these subtle dynamics are well positioned to exploit human capital for economic development. This change is so fundamental that it calls into question some economic truisms. For example, unlike physical capital, intellectual capital may not be subject to the law of diminishing returns. Nor does the value of knowledge necessarily diminish when it is shared; hence, knowledge-based industries typically thrive in an environment of collaboration and may wither in a Darwinian zero-sum-game world.

Two forms of knowledge contribute to economic value and growth: theoretical and tacit. The former is acquired through traditional education. Tacit knowledge, by contrast, is informal and is often created by teams within a firm. It is embedded in the systems, processes, methodologies and technologies within organizations. Innovative activity has a high propensity to cluster spatially because tacit knowledge is largely transferred through informal networks, typically demanding direct and repeated contact.

Several studies have found that workers are more productive when they collaborate with the highly skilled – that the whole is greater than the sum of the parts. In fact, the single factor with the greatest power to explain differences in per capita income between states is the percentage of college graduates. On average, a one-year increase in a metropolitan area's educational level raises wages by 3 to 5 percent.

HUMAN CAPITAL INDEX

STATE	BA	MA	PHD	HUMAN CAPITAL COMPOSITE INDEX
MA	100	96	100	98.7
CT	98	98	92	96.0
MD	96	100	90	95.3
CO	94	88	94	92.0
NY	82	94	96	90.7
VT	84	86	80	83.3
CA	86	82	74	80.7
DE	74	76	86	78.7
RI	76	80	78	78.0
IL	68	74	88	76.7
ME	46	40	2	29.3
TN	22	34	22	26.0
ID	28	14	30	24.0
SD	24	8	36	22.7
SC	30	28	6	21.3
KY	8	38	18	21.3
WV	6	12	46	21.3
MS	14	18	10	14.0
NV	12	16	4	10.7
AK	2	2	14	6.0
AR	4	4	8	5.3

RISK CAPITAL AND ENTREPRENEURIAL INFRASTRUCTURE

In eras of rapid technology change, entrepreneurial skills play a unique role because new enterprises, having no history and no personal stakes, are better positioned to harness new technology. In the words of the MIT economist, Lester Thurow, "entrepreneurs are central to the process of creative destruction, since they are the individuals who bring the new technologies and the new concepts into active commercial use. They are the change agents of capitalism."

Existing businesses often hesitate to introduce new products for fear of cannibalizing their current sales. Big, bureaucratic, firms often do not even recognize the value of their own discoveries and how they could be applied. The effective democratization of capital has supported New Economy growth. In the old financial order, entrepreneurs with high-risk, high-potential-return projects faced great difficulty in obtaining early-stage funding. But broader access to venture capital has made a big difference. Many of these new firms require large amounts of external financing for an extended period before they can tap traditional debt or equity markets. And private equity from individual investors or highly specialized venture capital firms is filling this void.

Venture capital is also important to later-stage product development. It represents a small share of the overall capital markets, but its true value cannot be measured in dollars. Venture capitalists assist in business-plan

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development, become board members, lend management skills, suggest strategic partnerships and alliances, assist in expansion plans, and can mobilize key talent where it is needed. Venture capital activity is an excellent way to assess whether financiers have confidence in the new ideas and entrepreneurial infrastructure of a region.

Our framework for regional economic growth explicitly recognizes the role of entrepreneurship in the new economics of place. This framework includes the availability of training, support and early-stage financing.

GLOBALIZATION ATTRIBUTES

Global economic integration is causing profound changes in economic structures of nations, industries, firms – and, most important, places. Technological advances have diminished transportation, telecommunications and computational costs, increasing the ease of global flows of information. In a globalized economy, success turns in part on a firm's ability to meet global quality standards and to tap into a global distribution network.

Information technology and globalization are inexorably intertwined. By reducing the cost of communications, information technology is aiding the globalization of production and capital markets. Globalization spawns competition, boosting innovation and leading to quicker diffusion of new technology through trade and capital investment markets. Many localities will be threatened by global economic integration. Debating free trade versus protectionism in the context of the new economics of place, however, is essentially pointless. A service-dominated economy characterized by constant, rapid information exchange without regard to geography is one in which globalism is deeply, and irrevocably, embedded. As Claude Smadja of the World Economic Forum notes, the real question is "how to manage the implications of the globalization process and turn it into a historic opportunity for greater wealth creation and distribution."

Places can link to the global economy by specializing as innovators, producers or networkers. Place-based clusters will have components of each specialty, but be more concentrated in one or the other. Clusters linked to the outside world offer access to the best practices and latest industry developments. Government can assist in establishing and maintaining connections to the global network and by helping cluster members find global partners.

Innovators specialize in ideas, designs and plans for new products and services. They are lightning rods for brainpower, which is directed to knowledge-based industries. Here we are talking about the knowledge, skills, experience and innovation potential to generate valuable intellectual property. Silicon Valley, Boston and Bangalore are all examples

RISK CAPITAL AND ENTREPRENEURIAL INFRASTRUCTURE

STATE	SBIR AWARDS	BUSINESS STARTS	VC INVESTMENT	IPO PROCEEDS	COMPOSITE INDEX
CO	96	94	96	84	92.5
CA	86	90	98	92	91.5
MA	100	64	100	98	90.5
WA	76	80	94	100	87.5
MD	94	66	92	88	85.0
NJ	72	96	80	80	82.0
CT	90	72	88	74	81.0
NY	58	92	76	96	80.5
NH	92	70	90	46	74.5
UT	84	78	84	50	74.0
SD	32	20	66	8	31.5
LA	14	24	30	38	26.5
KY	10	18	46	30	26.0
IN	20	22	38	22	25.5
VT	82	8	4	6	25.0
NE	26	10	22	26	21.0
AR	6	32	14	18	17.5
ND	40	4	6	10	15.0
WV	38	2	16	4	15.0
WY	2	48	2	2	13.5
IA	12	6	10	20	12.0

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of innovation-driven localities.

Producer localities' comparative advantage is competence of execution. They excel in products based on an infrastructure and supply network that supports high-value-added, cost-effective production. Producer locations are places where world-class manufacturers gravitate. Austin, Boise and Cedar Rapids fit the description well.

GLOBALIZATION INDEX

STATE	GLOBALIZATION INDEX
VT	100
WA	98
TX	96
LA	94
MI	92
AZ	90
AK	88
ID	86
CA	84
KY	82
AR	22
MO	20
RI	18
OK	16
ND	14
SD	12
MD	10
MT	8
WY	6
NV	4
HI	2

Network localities specialize in organizing global connections. They serve as places of exchange, linking the culture and knowledge of global business practices. Networkers assist in putting together deals or transport goods and services across borders. Miami, Los Angeles, Hong Kong and Singapore are examples.

Localities must analyze their comparative advantages along innovator, producer and networker dimensions. Places need to carve out niches where they fit well, filling gaps in competence by networking into the global system. For their part, regional economic-development officials must embrace the global-regional cluster network paradigm and implement their strategies accordingly.

SOCIAL CAPITAL NETWORK

Local networks of public and private institutions play a key role in maximizing the rate of return on core New Economy assets. A cluster of interdependent firms and institutions in a locality offers its members advantages in efficiency and flexibility. Well-organized institutional networks – public-private partnerships, trade associations, universities, think tanks and vocational training programs – assist in connecting the assets of a place to promote economic growth relative to those places without such networks.

How local government and affiliated institutions view their roles in the new economics of place is critical in shaping the rapidly changing economic landscape. Unlike previous waves of cyclical economic change and corporate restructuring, the New Economy allows speedy, fundamental shifts to occur across all sectors of the economy, influencing even demographics and social infrastructure. Success requires proactive participation from local government and nonprofit organizations; passivity will handicap a region in the long-term competitiveness race.

Local government has long been a driving force in regional economic development. In the New Economy, its role has only grown; participation as a planner and promoter of regional economic growth is integral for sustained regional success. Government performs two distinct functions here. First, it must adapt educational institutions to the evolving needs of the local economy. Second, it must lead in retraining the local labor force for knowledge-based industries.

QUALITY-OF-PLACE FACTORS

The shift to New Economy industries frees people and businesses from traditional constraints on mobility. More and more, companies and skilled labor locate where they want – not where they must. As the noted social geographer, Joel Kotkin, points out, knowledge workers are "very sophisticated consumers of place who view the world as a smorgasbord of locales that compete for their affections and attention."

NEW ECONOMY INDEX

We have developed a New Economy Index for

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localities, which incorporates the elements our research suggests matter most in attracting and sustaining New Economy activity. Our initial focus has been on a state index, but we hope to overcome data and methodological limitations that make it more difficult to build a parallel index for metropolitan areas.

The index includes components for research, development and innovation assets, human capital capacity, the risk-capital and entrepreneurial infrastructure, and the globalization attributes of states. We derive the weights for the 12 index components from statistical regressions that measure their relative importance in determining per capita income.

I believe that the index accurately reflects how states are positioned to capture opportunities for growth based upon the new economics of place. The leaders are concentrated in the Northeast, the West and the Pacific Coast. The top five states are Massachusetts, California, Colorado, Connecticut and Maryland. The bottom five are Wyoming, Mississippi, West Virginia, South Dakota and Arkansas. Massachusetts is first, with a composite score of 93.0; it ranked first on four of the 12 measures and second on three. Its worst rank was 19th (on business start-up rates). Massachusetts leads this ranking thanks to its deep research capabilities, rich pool of human capital and plentiful venture capital.

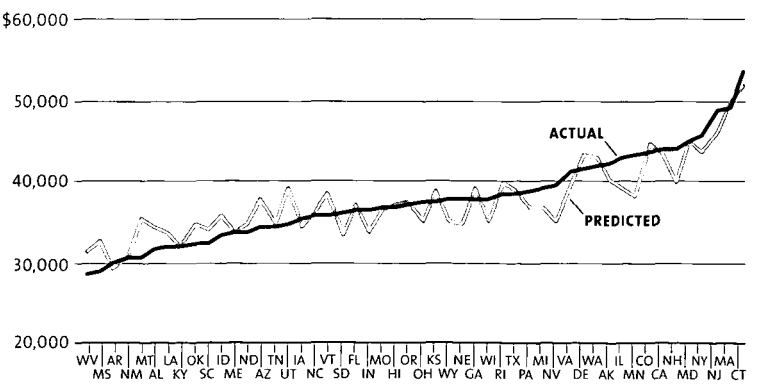
California's second-place rank is based on its globalization assets, the quality of its patents, its superior venture capital network and its strong entrepreneurial infrastructure. The Golden State placed behind Massachusetts because the average skills of its work force have been diluted by large numbers of relatively uneducated immigrants.

Note the association between the per capita income of the working-age population and the components of our New Economy Index. Overall, the components explain (in a statistical sense) about 80 percent of the variation in per capita income among the states. M

MILKEN INSTITUTE NEW ECONOMY INDEX

STATE	MI INDEX	STATE	MI INDEX
MA	93.0	KS	48.0
CA	85.3	OH	47.8
CO	83.5	MO	47.0
CT	82.7	ID	46.8
MD	78.3	HI	46.5
NY	77.0	WI	45.7
WA	75.8	AL	42.0
DE	71.5	TN	41.5
NJ	71.2	AK	40.0
NH	69.7	IN	38.3
UT	69.2	MT	35.3
TX	65.5	NV	33.7
AZ	62.8	IA	32.8
OR	62.2	LA	32.2
VA	61.7	NE	32.2
RI	61.5	OK	30.7
IL	61.3	SC	30.5
MN	60.5	ME	30.2
PA	60.5	KY	27.0
GA	60.2	ND	25.8
NM	59.8	WY	24.7
MI	57.2	MS	24.2
VT	57.2	WV	21.7
NC	56.8	SD	19.3
FL	50.3	AR	11.5

PER CAPITA INCOME OF WORKING-AGE POPULATION


$60,000
50,000
40,000
30,000
20,000
ACTUAL
PREDICTED
WV AR MT LA OK ID ND TN IA VT FL MO OR KS NE WI TX MI VA WA IL CO NH NY MA
MS NM AL KY SC ME AZ UT NC SD IN HI OH WY GA RI PA NV DE AK MN CA MD NJ CT

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THE MILKEN INSTITUTE'S NEW CEO

Michael L. Klowden, former president of investment banking firm Jeffries & Company in Los Angeles, has been named president of the Milken Institute. He succeeds Donald Straszheim, who became vice chairman of the Institute in July.

Klowden, 56, holds a law degree from Harvard Law School and is a trustee of his undergraduate alma mater, the University of Chicago. Before moving to Jeffries & Co. in 1995, he was a senior partner at Morgan, Lewis & Bockius, the fourth largest law firm in the United States.

9/11 COULD COST L.A. 110,000 JOBS

The terrorist attacks of September 11 could cost the Los Angeles region more than $23 billion in lost income and 110,000 jobs over the next year, according to an economic assessment conducted by the Milken Institute for the Los Angeles Economic Impact Task Force. The Institute's economists predict that the L.A. economy will be in recession through the second quarter of 2002. Among the hardest hit sectors: transportation and tourism.

Under the "most likely" scenario, the L.A. economy will lose 23,000 jobs in the fourth quarter of 2001 and 76,000 before the recession bottoms out in 2002. Under the "prolonged pessimism" alternative scenario, the job losses could be 50 percent greater.

To view a summary of the economic analysis, visit our Web site at www.milkeninstitute.org. To view the full report, go to the mayor's Web site at www.ci.la.ca.us/mayor.

2002 GLOBAL CONFERENCE

The Milken Institute's 5th annual Global Conference is scheduled for April 22-24 in Los Angeles.

This year's event, held in cooperation with Forbes, will once again include a panel of Nobel laureate economists moderated by the Institute's chairman, Michael Milken. Other topics on the agenda: the economic outlook for the United States, Europe, Asia and Latin America, as well as sessions on biotechnology, telecommunications, technology, demographics and much more. For the latest on program information and registration, visit www.milkeninstitute.org.

CALIFORNIA ECONOMY SLOWS, BUT FUTURE BRIGHT

California remains an economic powerhouse, despite being buffeted by electricity woes, the downturn in technology and the national recession. So concluded business leaders, government officials and economists gathered at the Milken Institute's third annual State of the State Conference in November.

State Treasurer Philip Angelides, the conference's keynote speaker, elaborated on the

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"Financing California's Future" panelists share a light moment with moderator, Mike Milken. Left to right: Mayor Jerry Brown, Rick Hayes, Dominic Ng, Mike Milken and Robert Oehler.

challenges facing California – not least of which is a budget deficit of between $8 billion and $14 billion. But he professed confidence that the state will come out of recession during the second half of 2002. Governor Gray Davis concurred, "While we do have a bumpy road ahead of us – probably for the next 10 to 12 months – confidence, innovation, immigrant spirit, and just the courage and resolve to see our way through this will get us through."

To view highlights of the conference, visit the Institute's Web site at www.milkeninstitute.org.

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ANSWERS TO THE PUZZLER, PAGE 87

"Most of us are … ignorant of many complex fields, from botany to brain surgery. As a result, we simply do not attempt to operate in those fields. However, every voter and every politician … has something to say about economics." — Thomas Sowell, *Basic Economics.*

A. tempt
B. Hausa
C. orders
D. my foot
E. aurora
F. synthetic
G. steer P.T.
H. Orwell
I. whistle
J. Episode V
K. long run
L. louvers
M. beefy
N. adamantine
O. sever
P. idiot
Q. commotion
R. exigent
S. catatonia
T. oy vey
U. nabobs
V. off message
W. Motorola
X. infra
Y. cryptonym
Z. sophist

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IN THIS TIME OF NATIONAL CRISIS, HOUSE REPUBLICANS WERE CONVENED FOR A BRAIN-STORMING SESSION.
THE PROBLEM FACING US TODAY IS HOW TO DEVELOP AN EFFECTIVE STIMULUS PACKAGE FOR THE RECESSION NOW EXACERBATED BY THE EVENTS OF SEPTEMBER 11TH
I WANT YOU ALL TO EXPAND YOUR IMAGINATIONS AND COME UP WITH WHATEVER WILDLY INVENTIVE IDEAS POP INTO YOUR MINDS. DON'T BE SELF-CONSCIOUS. THE WAY BRAIN-STORMING WORKS IS THAT DIFFERENT PEOPLE'S IDEAS SPARK CREATIVITY IN ONE ANOTHER AND A BRILLIANT NEW SOLUTION EMERGES.
SO, LET'S GET STARTED WHO HAS AN IDEA?
AFTER A BRIEF PAUSE, SOMEONE SPOKE UP.
HOW ABOUT TAX CUTS FOR RICH PEOPLE AND BIG CORPORATIONS?
VERY GOOD! ANYONE ELSE HAVE AN IDEA?
I DO! LET'S CUT TAXES ON BIG CORPORATIONS AND RICH PEOPLE!
VERY GOOD! ANYONE ELSE?
YEH! ME! RICH PEOPLE AND BIG CORPORATIONS ARE OVERTAXED. LET'S GIVE THEM A BREAK!
TERRIFIC! YOU'RE ALL GETTING THE HANG OF IT. ANYONE ELSE?
SOON THE WHOLE ROOM WAS CHARGED WITH EXCITEMENT AS IDEAS FLOWED AS FAST AS PEOPLE COULD SAY THEM.
TAX CUTS FOR RICH PEOPLE AND BIG CORPORATIONS!
CUT RICH PEOPLE'S TAXES!
AND CUT TAXES ON BIG CORPORATIONS TOO!
AND LOWER THE TAX BURDEN ON PEOPLE, WHO ARE WEALTHY!
BIG CORPORATIONS DESERVE THAT TOO!
AND SO DO RICH PEOPLE...
IN AN ADJOINING ROOM BEHIND A ONE-WAY MIRROR, A GROUP OF BRAIN RESEARCHERS OBSERVED.
IT SEEMS TO BE A GENETIC DEFICIENCY. NO MATTER HOW INAPPROPRIATE OR COUNTERPRODUCTIVE IT IS, THEIR BRAINS ARE GENETICALLY CAPABLE OF GENERATING ONLY ONE IDEA.
AND YET THEY ACT AS IF THEY'RE COMING UP WITH A SOLUTION UNIQUELY SUITED TO EACH NEW PROBLEM.
THAT'S PART OF THEIR DISEASE.
DO YOU THINK WE'LL EVER FIND A CURE?
MAYBE SOMEDAY.
BUT FIRST LET'S CURE CANCER. IT'S EASIER.

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MILKEN INSTITUTE
2002 Global Conference
IN CONJUNCTION WITH **Forbes**

April 22-24, 2002
Beverly Hilton Hotel, Los Angeles, CA

Building Prosperity in an Interdependent World.

Two Nobel Laureate sessions.
More than 100 panelists and 1,500 participants.

Confirmed Panelists (partial list):

William J. Bennett, Former U.S. Secretary of Education ■ **Steve Burd,** Chairman, President and CEO, Safeway Inc. ■ **Peter Chernin,** President and Chief Operating Officer, News Corporation ■ **Barry Diller,** Chairman and CEO, USA Networks, Inc. ■ **Steve Forbes,** President and CEO, Forbes ■ **George Gilder,** Editor, *Gilder Technology Report* ■ **David Hill,** Chairman and CEO, Fox Sports Television Group ■ **Mel Karmazin,** President and Chief Operating Officer, Viacom Inc. ■ **Robert Kotick,** Chairman and CEO, Activision, Inc. ■ **J. Terrence Lanni,** Chairman and CEO, MGM MIRAGE ■ **John Malone,** Chairman, Liberty Media Corporation ■ **Michael Milken,** Chairman, Milken Institute ■ **Leonard Riggio,** Founder and Chairman, Barnes & Noble, Inc. ■ **Jim Schroer,** Executive Vice President of Sales, DaimlerChrysler ■ **Terry Semel,** Chairman and CEO, Yahoo!, Inc. ■ **Henry Silverman,** Chairman, President and CEO, Cendant Corporation ■ **Barry Sternlicht,** Chairman and CEO, Starwood Hotels and Resorts ■ **Donald Strazsheim,** Vice Chairman, Milken Institute ■ **Gary Wilson,** Chairman, Northwest Airlines ■ and **Steve Wynn,** President and CEO, Wynn Resorts

Confirmed Nobel Prize Winners (partial list):

Kenneth Arrow, Stanford University ■ **Gary Becker,** University of Chicago ■ **Myron Scholes,** Stanford University

For more details and registration information, go to:
www.milkeninstitute.org or call (310) 998-2605

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